

MULTIPLEX

**CONSTRUCTION ENVIRONMENTAL
MANAGEMENT PLAN**

NEXTDC S4
Revision 3

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1. Introduction

1.1 Purpose

The purpose of this Construction Environmental Management Plan (Plan) is to provide a coordinated high level plan that details, at a Project level, the environmental management strategies and procedures that will be adopted on the NEXTDC S4 Project (the Project) on which Multiplex is operating as the Principal Contractor.

This plan is a sub-plan of the Project Management Plan, which forms part of Multiplex Management System which is certified to:

- » AS/NZS ISO 9001:2015 – Quality Management System
- » AS/NZS ISO 14001:2015 – Environmental Management System
- » AS/NZS ISO 45001:2018 – Occupational Health and Safety Management System
- » New South Wales Government Accreditation Scheme.

Copies of these certifications can be found on the Multiplex Operating System ‘Document and Forms Library’.

1.2 Scope of this Plan

This Plan applies to the works associated with the Project and consists of:

- » An overview of the Environmental Management System (EMS)
- » The organisational structure for environmental management
- » Applicable legislative requirements
- » Sub-plans to manage the environmental aspects of the Project
- » Environmental incident management processes
- » Processes to monitor and evaluate environmental performance.

1.3 Abbreviations

The abbreviations used in this Plan are outlined below.

Abbreviation	Definition
AS/NZS	Australian and/or New Zealand Standard
ASS	Acid Sulfate Soil
EMP	Environment Management Plan
DEC	Department of Environment and Conservation
DIA	Department of Indigenous Affairs
EMS	Environmental Management System
EWMS	Environmental Work Method Statement
SDS	Safety Data Sheet
MPX	Multiplex Constructions Pty Ltd
MSOP	Management System Operational Procedures
NEPC	National Environment Protection Council
NEPM	National Environmental Protection Measures

Figure 1 *Abbreviations*

1.4 Precedence

Where ambiguity is detected between the procedures and requirements in this plan and the MSOPs located on Multiplex Operating System, then the procedures nominated in this Plan will take precedence.

1.5 Interface with other Operational Procedures and Project Plans

This Plan should be read in conjunction with the MSOP and Management Plans detailed in Section 2.2 of this Plan. The MSOP referenced in this Plan are confidential documents, and as such, will not be issued outside of Multiplex. However, they will be made available, for the purpose of surveillance and audit of the EMS.

1.6 Project Description

The NEXTDC S4 project is located at Lot 305, 16 Johnston Crescent, Horsley Park, NSW 2175. A State Significant Development Application has been prepared and submitted in support of this data center project. The project site has a total area of 8.206 hectares.

The project consists of two data center buildings comprising a total gross floor area (GFA) of 61,695m² including 56,464m² of technical data hall floor space and 5,231m² of ancillary office floor space, including 'front of house' meeting and administrative spaces.

Ancillary developments on site include a centralized security office building at the main vehicle entrance, on-site parking for two hundred cars, identification signage, civil and stormwater works and 12,769m² of deep soil landscaping.

The project consists of a high-voltage (HV) power connection delivering 294 megawatts of power, including a 330kV substation and 33kV switching station, plus above ground diesel storage tanks and above ground water tanks for industrial water and fire water.

The NEXTDC S4 project can be summarised as follows:

- Building C, HV switching building, 330kV substation, entrance to site, centralised security office (SOC), HVSB, water tanks, fire tanks, pump rooms and the site infrastructure works.
- Building D
- Building A
- Building B



Figure 2 *Figure 1* NEXTDC S4 Project Render

1.7 Project Scope

The scope of the NEXTDC S4 project encompasses the design, construction, and commissioning of the entire data centre development in a staged manner. The project will be delivered progressively to align with operational requirements and infrastructure readiness, ensuring seamless integration of each stage into the overall precinct.

The staged approach includes:

- » **Stage 1:** Construction and commissioning of Building C and D, including integrated data hall fit out, and associated site-wide infrastructure. This stage also incorporates critical precinct works such as the HV switching building, 330kV substation, centralized security office (SOC), water tanks, fire tanks, pump rooms, and landscaping to enable initial operations.
- » **Stage 2:** Delivery of Building A, including integrated data hall fit out and integration into the precinct infrastructure.
- » **Stage 3:** Construction of Buildings B including integrated data hall fit out, along with any remaining ancillary works, to complete the full development as outlined in the State Significant Development Application.

This staged delivery strategy ensures that operational capacity can be brought online progressively while maintaining compliance with regulatory requirements and optimizing resource allocation.

1.8 Legal and Other Requirements

In accordance with Procedure BU AUS IMS P DIV 050 – Document and Records Management, a schedule of environmental legislation has been developed to identify all environmental legal and other requirements that are applicable to the project. This schedule is maintained on Multiplex Operating System and is reviewed annually by the WHS&E Manager/Coordinator.

1.8.1 Legislative References

The pertinent Acts, Regulations and Guidelines that apply to the project are outlined below:

ENVIRONMENTAL LEGISLATION REGULATIONS AND GUIDELINES	
Federal Acts	
» Environment Protection and Biodiversity Conservation Act 1999	» Ozone Protection and Synthetic Greenhouse Gas Management Act 1989 (Cth)
NSW Acts	
» Protection of the Environment Operations Act 1997 (POEP Act)	» Biodiversity Conservation Act 2016
» Local Land Services Act 2013	» Waste Avoidance and Resourcing Recovery Act 2001
Federal Regulations	
» Environment Protection and Biodiversity Conservation Regulations 2000	» Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995
NSW Regulations	
» Protection of the Environment Operations (General) Regulation 2009	» Biodiversity Conservation Regulation 2017
» Protection of the Environment Operations (Unground Petroleum Storage) Regulation 2014	» Sydney Water Regulation 2017
» Protection of the Environment Operations (Unground Petroleum Storage) Regulation 2014	» Water Act 1912
» Protection of the Environmental Operations (Clean Air) regulations 2010	» Local Land Services Regulation 2014
» Protection of the Environmental Operations (Waste) regulations 2014	» Contaminated Land Management Regulations 2013
Commonwealth (National) Environmental Legislation Act	
» Aboriginal and Torres Strait Islander Heritage Protection Act 1984	» Ozone Protection and Synthetic Greenhouse Gas Management Act 1989

ENVIRONMENTAL LEGISLATION REGULATIONS AND GUIDELINES

- » Environmental Protection and Biodiversity Conservation Act 1999
- » National Environment Protection Council Act 1994
- » National Greenhouse and Energy Reporting Act 2007
- » Product Stewardship Act 2011

Commonwealth National Environmental Protection Measures

- » National Environment Protection (National Pollutant Inventory) Measures 1998
- » National Environment Protection (Ambient Air Quality) Measure 1998
- » National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013)
- » National Environment Protection (Diesel Vehicle Emissions) Measure 2001
- » National Environment Protection (Used Packaging Materials) Measure 2011
- » National Environment Protection (Air Toxics) Measure 2011

NSW Environmental Planning Policies

- » State Environmental Planning Policy (State and Regional Development) 2011
- » State Environmental Planning Policy (Exempt and Complying Development Codes) (2008)
- » State Environmental Planning Policy (Infrastructure) 2007
- » State Environmental Planning Policy (Major Development) 2005
- » Heritage Act 1977
- » National Parks and Wildlife Act 1974
- » Heritage Regulations 2012
- » State Environmental Planning Policy No 71 (Coastal Protection)
- » State Environmental Planning Policy No 55 (Remediation of Land)
- » Sydney Local Environmental Plan 2012
- » Pesticides Act 1999
- » Environmental Planning and Assessment Regulations 2000

Guidelines/ Australian Standards

- » Air Quality Guidance Notes for Construction Sites
- » Assessing Significance for Historical Archaeological Sites and Relics
- » Assessing Vibration – Technical Guidelines (2006) – DEC (EPA) AS1055
- » Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000)
- » City of Sydney Code of Practice for the Construction Hours/Noise 1992
- » City of Sydney Council's Policy for Waste Minimisation in New Developments 2005
- » Technical Guidelines to Minimise Blasting Overpressure and Ground Vibration
- » Environmental Management Systems Guidelines for the Construction Industry
- » Interim Construction Noise Guideline
- » Know Your Responsibilities – Managing Waste From Construction Sites
- » Managing Urban Stormwater – Soils and Construction
- » NSW Heritage Office Guidelines- Photographic Recording of Heritage Items using Film or Digital Capture.
- » AS 1940-2017- The storage and handling of flammable and combustible liquid
- » AS 4976-2008- The removal and disposal of underground petroleum storage tanks
- » AS 4897-2008 – The design, installation and operation of underground petroleum storage systems
- » UPSS Technical Note: Site Validation Reporting
- » UPSS Technical Note: Decommissioning, Abandonment and removal of UPSS

Figure 3 Environmental Legislative Regulation and Guidelines

1.8.2 Approvals, Licenses and Permits

The relevant approvals, permits and licenses for the project are outlined below:

Approval/Licence/Permit	Relevant Authority	Details
» Construction Certificate (CC)	» Certifier (Principal Certifying Authority)	» Required before any building works commence; certifies compliance with BCA and SSSA conditions.
» Occupation Certificate (OC)	» Certifier (Principal Certifying Authority)	» Required prior to occupation/use; confirms works completed per approved plans and conditions
» Compliance with SSSA Conditions	» NSW Department of Planning and Environment	» All conditions in the SSSA determination must be satisfied before CC and OC issuance.
» Crane Approvals	» CASA	» For crane operations impacting airspace or public roads
» Section 138	» Fairfield City Council	» Vehicular Crossings (Temp access road 9)
» Work Zone Permits	» Fairfield City Council	» Construction Work Zones (Tower Crane)
» Road Opening Permit	» Fairfield Council	» Stormwater Connection & discharge
» Section 73 Certificate	» Sydney Water	» Water Connections
» Building Plan Approval	» Sydney Water	» Stormwater Pit Relocation (SW02-01)
» Temporary Power Connection	» Endeavour Energy	» Construction power – Temporary builders supply

Figure 4 Approvals, permits and licenses

1.8.3 Development Conditions

The relevant development conditions relating to environmental management for the project are outlined below:

Condition No.	Requirement	CEMP Reference
» C1	» Environmental Management Management Plan Requirements	
	» Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:	» Section 1.8.3
	» (a) a condition compliance table for that plan;	
	» (b) detailed baseline data where required;	
	» (c) details of:	» Section 1.8
	» (i) the relevant statutory requirements (including any relevant approval, licence or lease conditions).	» Section 13
	» (ii) any relevant limits or performance measures and criteria; and	» Appendix
	» (iii) the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures;	
	» (d) a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria;	» Section 13 » Appendix
	» (e) a program to monitor and report on the:	» Section 13
	» (i) impacts and environmental performance of the development; and	» Appendix
	» (ii) effectiveness of the management measures set out pursuant to paragraph (d) above;	
	» (f) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;	» Section 13 » Appendix
	» (g) a program to investigate and implement ways to improve the environmental performance of the development over time;	» Section 13 » Appendix
	» (h) a protocol for managing and reporting any:	» Section 13
	» (i) incident and any non-compliance (specifically including any exceedance of the impact assessment criteria and performance criteria).	» Appendix
	(ii) complaint.	
	(iii) failure to comply with statutory requirements; and	
	» (j) a protocol for periodic review of the plan.	» Section 3.3
	» Note: The Planning Secretary may waive some of these requirements if they are unnecessary for unwarranted for management plans	» Section 10
» C2	» Construction Environmental Management Plan The Applicant must prepare a Construction Environmental Management Plan (CEMP) for the development in accordance with the requirements of condition C1 and to the satisfaction of the Planning Secretary.	
» C3	» Construction Environmental Management Plan » As part of the CEMP required under condition C2 of this consent, the Applicant must include the following:	
	» (a) details of the community consultation and complaints handling procedure to be implemented during construction;	» Appendix 5
	» (b) Construction Noise Management Plan (see condition B5);	» Appendix 4
	» (c) Construction Traffic Management Plan (see condition B35);	» Appendix 2
	» (d) Erosion and Sediment Control Plan (see condition B47);	» Appendix 3
	» (e) a copy of the development's:	» Appendix 7
	» (i) Aboriginal Heritage Management Procedures (see condition B54); and	» Appendix 6
	» (ii) Unexpected Contamination Finds Procedure (see condition B56);	

Figure 5 Development Conditions

1.9 Document Control

This plan and relevant environmental sub-plans will be revised:

- » Six monthly
- » In response to future project approvals or modifications
- » In response to changes in law, risks or accepted practices
- » In response to major changes in site conditions or work methods, or due to incidents
- » Commencement of new phases or stages of design and construction
- » In response to the findings, recommendations or outcomes of a planned management review, audit or risk assessment
- » Requests or requirements of EPA or any other Authority
- » In support of planning approvals or licence variations as necessary.

Electronic distribution of this Plan will be made to those detailed on the distribution list on Aconex.

All changes will be identified as below and communicated to all relevant personnel.

Revision	Date	Description	Page	Reviewed By	Approved By
0	21/11/25	Initial Issue	All	Thomas Cox	Samarth Yadav
1	10/12/25	Draft Issue	Various	Thomas Cox	Samarth Yadav
2	16/01/26	Issue	Various	Thomas Cox	Samarth Yadav

Figure 6 Document Revisions Control

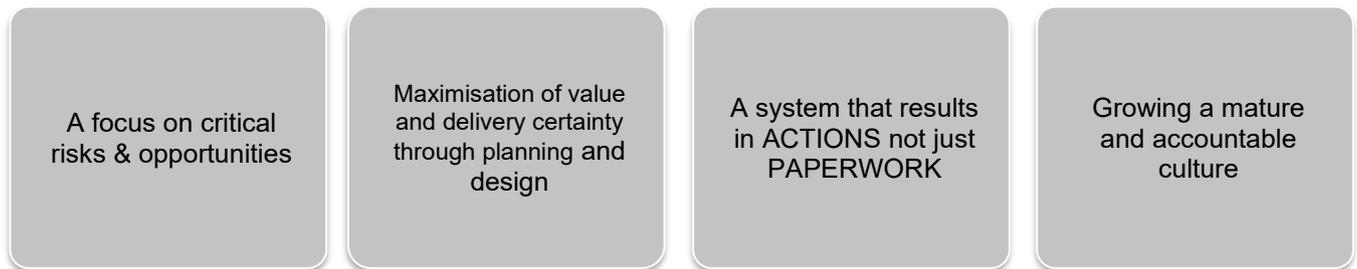
2. Environmental Management System Framework

2.1 Approach to Environmental Management

Multiplex continuously seeks to improve environmental culture and standards across its business and the broader industry.

Multiplex works with its clients to integrate environmental management controls as soon as possible. Our aim is to eliminate critical risks that may have long-term consequences.

Multiplex works collaboratively with key stakeholders, including our clients, regulators, industry peers, suppliers and subcontractors, to exceed our legal, contractual and other compliance obligations through the following key strategies:



2.2 Management System Framework

Multiplex has a management framework that is applied throughout the business and on all projects it undertakes. The EMS documentation forms part of this System Framework and is maintained in electronic format on the Multiplex Operating System.

The structure of the overall Management System is explained below.

ELEMENT	DESCRIPTION
Internal Control Framework	Based on the Committee of Sponsoring Organisations of the Treadway Commission (COSO), a model of internal control has been established that sets out the framework for all levels of the organisation to implement effective internal controls to achieve its mission and accomplish its goals and objectives.
Polices	Established, approved by senior management, and communicated throughout the organisation to provide a clear set of values and objectives.
Management System Operational Procedures	Established to define the management standard and operational requirements and describe the roles and responsibilities of key personnel. These procedures are periodically reviewed across all levels to determine their continued relevance and revised where necessary following significant incidents in response to continuous improvement initiatives or legislation changes.
Management Plans	A coordinated suite of management plans is established and deployed to: Document the systems, processes and controls required to be adopted on the project. Meet the needs of the project and the client's project-specific requirements. Clearly define the roles and responsibilities for the project.
Environmental Work Method Statements	Established for high-risk environmental construction activities performed on-site by Multiplex and/or subcontractors before the commencement of the tasks on site. The EWMSs are developed in consultation with personnel required to perform the functions and reviewed and signed off by Multiplex.
Permit to Work Systems	Established for the planning, coordination, authorisation and control of specified work activities to ensure that work is conducted safely.

Figure 7 Management Framework

3. Responsibility and Accountability

3.1 Environmental Policy

Multiplex policies relating to environmental management are contained in **Appendix 1**.

This policy will be made publicly available through the Multiplex Intranet and distributed for display in prominent Project locations. In addition, all personnel attending Project inductions will be made aware of the policy and Multiplex's commitment to implement it.

3.2 Objectives, Targets and Programs

Objectives and Targets are listed at the beginning of each of the environmental sub-plans, specifically for the applicable environmental aspect.

Senior Management will monitor, review, and assess environmental objectives and targets established in each sub-plan following Procedure BU AUS IMS P DIV 030 – *Planning and Performance Measurement*.

3.3 Management Review

Using audit results, inspection reports, corrective and preventative actions and meetings, Multiplex will continually improve the effectiveness of the EMS in accordance with Procedure BU AUS IMS P DIV 140 – *Management Review*.

Changes to existing procedures will be recorded and communicated to the affected personnel.

3.4 Organisational Chart

The organisational chart is available in the Multiplex Project Management plan.

3.5 Multiplex Roles and Responsibilities

Multiplex has identified appropriate levels of resources, individual responsibility, and accountability for managing environmental requirements across all roles within the Project Team. These are contained in Procedure AUS IMS P 010 – *Responsibility and Accountability*, throughout this plan and within position descriptions.

The general responsibilities and accountabilities of key project personnel are outlined below:

Regional Director

Description – Accountability

The Regional Director is responsible for establishing and resourcing the workplace team to meet the requirements of the MSOP and Plan at the Project. The Regional Director reports directly to the Regional Managing Director on all matters relating to the Project.

Roles and Responsibilities

The Regional Director is required to:

- » Ensure human, technical and financial resources are sufficient and appropriately allocated to the project to meet the requirements of the MSOP and those strategies outlined in the Multiplex HSEQ Policy.
- » Take overall responsibility and accountability for the prevention of adverse environmental impacts from the workplace and construction activities
- » Review performance reporting on the adequacy of implementation of MSOP and oversee the implementation of corrective action to facilitate continuous improvement.
- » Attend High Risk Workshops on the project where appropriate.
- » Develop, lead, and promote a culture that supports the intended outcomes of the Environmental Management System.

- » Ensure the environmental management system requirements are integrated into MPX's business processes.
- » Communicate the importance of effective environmental management and of conforming to the management system requirements.
- » Direct and support persons to contribute to the effectiveness of the environmental management system.

Regional Executive Operations

Description – Accountability

The Regional Executive Operations is responsible for assisting the workplace team to implement the requirements of the MSOP and Plan at the Project. The Regional Executive Operations reports directly to the Regional Managing Director on all matters relating to WHSE across the region and maintains a functional line of reporting to the Executive Director on all WHSE matters.

Roles and Responsibilities

The Regional Executive Operations is required to:

- » Undertake duties as directed by the Regional Managing Director.
- » Monitor regional implementation of the MSOP to manage compliance with legislation, regulations, codes of practice or standards, objectives, and targets.
- » Assist in developing and implementing standardised Environmental forms and procedures across the region.
- » Ensure the implementation of MSOP across the region to meet the requirements of AS/NZS ISO 14001.
- » Assist in investigations into significant incidents.
- » Develop, lead and promote a culture that supports the intended outcomes of the Environmental Management System.
- » Provide general support to Regional Health, Safety and Environmental Manager in matters relating to environmental issues.
- » Promote workers' participation in continuously implementing actions to improve the environmental management system.

Regional Health, Safety and Environmental Manager

Description – Accountability

The Regional Health, Safety and Environmental Manager is responsible for assisting the workplace team in implementing the MSOP requirements and Project Plan. The Health, Safety and Environmental Manager reports directly to the Regional Executive - Operations on all matters relating to HSE across the region and maintains a functional line of reporting to the Regional Executive on all HSE matters.

Roles and Responsibilities

The Regional HSE Manager is required to:

- » Undertake duties as directed by the Regional Executive – Operations.
- » Monitor regional implementation of the MSOP to manage compliance with legislation, regulations and codes of practice or standards and objectives and targets.
- » Assist in developing and implementing standardised Environmental forms and procedures across the region.
- » Ensure implementation of MSOP across the region to the requirements of AS/NZS ISO 14001 and achieves its intended outcome(s)
- » Participate in high-risk construction workshops.
- » Conduct regular internal audits across projects and report on environmental management performance.
- » Co-ordinate external audits.
- » Compile and issue the WHSE monthly report to senior management on the performance of the environmental management system.

- » Coordinate or conduct investigations into significant incidents.
- » Communicate incident occurrences, particularly those involving emergency services or regulatory authority attendance at the workplace, to relevant personnel and external parties immediately upon becoming aware of the incident.
- » Role model appropriate behaviour concerning HSE matters.
- » Provide general support to all employees in matters relating to HSE.
- » Promote workers' participation in continuously implementing actions to improve the environmental management system.

The Regional HSE Group

Description – Accountability

The Regional HSE Group is responsible for assisting the workplace team in implementing the requirements of the MSOP and Plan for the Project. The Regional HSE Group reports directly to the HSE Manager on all matters relating to HSE across the region. It maintains a functional reporting line to the Regional Executive - Operations on all HSE matters.

Roles and Responsibilities

The Regional HSE Group is required to:

- » Undertake duties as directed by the HSE Manager.
- » Monitor regional implementation of the MSOP to manage compliance with legislation, regulations and codes of practice or standards and objectives and targets.
- » Determine and report back to the HSE Manager, the Construction Manager or Regional Director that the human, technical and financial resources on the project are sufficient
- » Assist in developing and implementing standardised Environmental forms and procedures across the region.
- » Ensure the implementation of environmental management systems across the region according to AS/NZS ISO 14001 requirements.
- » Participate in high-risk construction workshops.
- » Conduct regular internal audits across projects and report on HSE management performance.
- » Aid the site teams during an investigation into an incident.
- » Provide general support to all staff in matters relating to HSE.
- » Provide training in environmental matters related to the project.
- » Conduct site inspections (safety and environmental).
- » Promote workers' participation in continuously implementing actions to improve the environmental management system.

Construction Manager

Description – Authority

The Construction Manager is responsible for assisting the workplace team to implement the requirements of the MSOP and Plan at the Project. The Construction Manager reports directly to the Regional Director on all matters relating to HSE.

Roles and Responsibilities

The Construction Manager is required to:

- » Undertake duties as directed by the Regional Director or Regional Managing Director.
- » Monitor the effectiveness of human, technical and financial resources, ensure they are sufficient for the project and report back to the Regional Director.

- » Attend High Risk Workshops on the project where appropriate.
- » Facilitate the documented investigation of incidents involving environmental harm within 24 hrs and ensure appropriate and timely action is initiated to prevent recurrence.
- » Communicate incident occurrences, particularly those involving emergency services or regulatory authority attendance at the workplace, to relevant personnel and external parties.
- » Develop, lead and promote a culture that supports the intended outcomes of the Environmental Management System.

Project Manager

Description – Authority

The Project Manager is responsible for ensuring that the Plan is implemented on the project and has line control of Multiplex project personnel.

Roles and Responsibilities

The Project Manager is required to:

- » Assist with the development of the site-specific Plan in accordance with the MSOP and the strategies of the HSEQ Policy.
- » Establish HSE objectives are established and are compatible with the strategic direction of the organisation.
- » Assess tenders submitted by subcontractors and suppliers and the ability of those subcontractors to comply with environmental conditions stipulated in the contract.
- » Assist the Site Manager in the ongoing development of the Project Risk Register, including assessment of moderate to high-risk trade activities to establish the level of environment documentation required before work commences.
- » Facilitate the development of a project-specific induction with the Site Manager in accordance with the Multiplex MSOP requirements and any specific conditions outlined in the Development Application or Project Risk Register.
- » Manage compliance with all appropriate environmental legislation, EPA guidance material, codes of practice, Australian/New Zealand and national standards and other relevant industry guidelines or information.
- » Ensure an investigation is undertaken for all significant incidents and ensure that appropriate and timely action is initiated to prevent recurrence.
- » Communicate incident occurrences, particularly those involving emergency services or regulatory authority attendance at the workplace, to relevant personnel and external parties including the Regional Director and regional WHSE Manager immediately on becoming aware of the incident.
- » Protecting workers from reprisals when reporting incidents, hazards, risks and opportunities.
- » Disseminate environmental information to all relevant personnel.
- » Ensure any hazard or risk raised by an employee or subcontractor, tenant or member of the public relating to the environment on a Multiplex project is properly investigated, recorded, rectified/closed out, and this is then recorded on the Multiplex Incident Investigation form where applicable.
- » Assist the Site Manager or WHSE Manager with corrective action to close out all items raised in any third party internal or external environmental inspection or audit of the project.
- » Develop, lead and promote culture that supports the intended outcomes of the Environmental Management System.
- » Promote workers' participation in continuously implementing actions to improve the environmental management system.

Site Manager

Description – Authority

The Site Manager is responsible for assisting the Project Manager in the day-to-day implementation of the Plan.

Roles and Responsibilities

The Site Manager reports directly to Project Manager and is required to:

- » Undertake duties as directed by the Project Manager.
- » Ensure implementation and compliance with this Plan.
- » Assist in risk management planning of work activities to establish the level of environment management documentation required before commencement.
- » Facilitate the review of subcontractor environment plans or procedures for specific work contracts, including EWMS documentation, before the high-risk environmental subcontractor commencing work at the workplace.
- » Develop, lead and promote culture that supports the intended outcomes of the Environmental Management System.
- » Ensure the implementation of the Multiplex Procedures and issue Permits where required.
- » Facilitate workplace environmental inspections.
- » Implement systems that requires Multiplex employees or subcontractors, their employees have received appropriate work activity training (e.g. Daily Pre-Start or Toolbox Talk Record) in any documented EWMS or equivalent procedure relating to their work tasks. (Simpel)
- » Report hazards and ensure appropriate and timely remedial action.
- » Facilitate the documented investigation of incidents involving environment harm within 24 hrs and ensure that appropriate and timely action is initiated to prevent recurrence.
- » Inform the regional HSE Manager immediately on becoming aware of an Emergency Services or Regulatory Authority visit to the workplace.
- » Assist in identifying any need for project specific training and provide training to ensure that employees, are appropriately qualified to undertake job tasks.
- » Ensure workers are inducted and that the information is recorded in the Multiplex Workplace Induction Form.
- » Participate in pre-start meetings.
- » Arrange toolbox or other consultative meetings and invite input from people on matters relating to work processes and environmental.
- » Promote workers' participation in continuously implementing actions to improve the environmental management system.

Contract Manager

The Contracts Manager is required to:

- » Ensure the procurement programme that can achieve environmental planning conditions.
- » Establish a comprehensive, integrated and systematic approach to managing the procurement of trade packages
- » Preparation, issue and evaluation of the trade packages for tender
- » Establish a record filing system and maintain procurement records

Site Supervisors

The Site Supervisor reports directly to Site Manager and is required to:

- » Undertake duties as directed by the Project Manager and Site Manager.
- » Ensure implementation and compliance with this Plan.
- » Assist in risk management planning of work activities to establish the level of environmental management documentation required before commencement.
- » Assist in reviewing environmental work method statements or equivalents provided by subcontractors before the commencement of work.

- » Develop, lead and promote a culture that supports the intended outcomes of the Environmental Management System.
- » Ensure the implementation of the Multiplex Procedures and issue Permits where required.
- » Report hazards and ensure appropriate and timely remedial action.
- » Monitor daily work activities and undertake formal inspections of work areas, using the Onsite Monitoring of EWMS against High-Risk Activities.
- » Complete site inspections as per assigned responsibilities detailed in this plan.
- » Promote workers' participation in continuously implementing actions to improve the environmental management system.

Employees, Workers and Subcontractor Supervisors

Employees and workers including subcontractors are responsible to:

- » Comply with:
 - any reasonable instruction, policy or procedure given by their employer or Multiplex.
 - environmental documentation, including as EWMS, ECMs and site inductions.
 - all legislation, acts, regulations, relevant codes of practice and standards.
- » Report environmental incidents and issues to their supervisor or Multiplex contact.
- » Immediately stop any work that appears to be unsafe or a risk to the environment.

Managers or Supervisors of subcontractors have the additional responsibilities to:

- » Ensure that all personnel under their supervision are:
 - adequately trained and supervised.
 - aware of the environmental hazards and risks associated with their work.
- » Ensure that the hierarchy of controls are applied where practicable when planning works and developing control measures.
- » Monitor work being performed following relevant Management Plans, permits, ECMs, EWMS, and procedures.

4. Communication and Consultation

4.1 Communication

Multiplex will ensure meaningful and effective communication processes are established and maintained in accordance with Procedure BU AUS IMS P DIV 040 – *Communication and Consultation*.

Communication on EMS matters will occur through the mechanisms outlined below.

Event	Frequency Requirement	Participants	Record/Evidence
Project specific induction	Prior to commencement of contracted work	All personnel	Project induction and declaration form
Work activity Induction (in EWMS or equivalent).	Prior to commencing any building/construction work	Personnel carrying out specific work activities	Record of training – listed on the EWMS or toolbox meeting record
Toolbox meetings	During the introduction of a new process (EWMS) or when discussing environmental issues / topics	MPX Supervisors and Subcontractors	Toolbox meeting record
Subcontractor meetings	Weekly or as required	Project team / Subcontractors, their employees and others as required	Minutes of meeting
Project team meetings.	Fortnightly or as required	Project team	Minutes of meeting
PCG meetings	Monthly	Client and Project Manager.	PCG report
Electronic media (i.e. Aconex)	As required	All personnel	Aconex
Project notice board and general signage	As required	All personnel	Project notice board
Environmental Site inspection actions	Fortnightly	Project team and subcontractors	Environmental Site inspection report
Enquiries and Complaints	As required	As per Stakeholder Management Plan	Communications register
Other	As required	As per Stakeholder Management Plan	As per Stakeholder Management Plan

Figure 8 *Project EMS Communication Mechanisms*

4.2 Consultation

To ensure effective consultation occurs at all levels throughout the life of the Project, Multiplex will operate in accordance with Procedure BU AUS IMS P DIV 040 – *Communication and Consultation*.

Employees and contractors will be consulted about aspects and impacts that have the potential to impact on the environment.

Consultation on environmental matters will occur through the mechanisms outlined in the table below.

Event	Frequency	Participants	Record
Work activity induction (in EWMS or equivalent)	Prior to commencing work	Personnel carrying out specific work activities	Record of training – listed on the SWMS or Toolbox Talk Record
Aspects and Impacts Risk Workshops	6 monthly	Project team and subcontractors (where required)	Aspects and Impacts Register
Toolbox meetings	As required	Subcontractors	Toolbox meeting record

Event	Frequency	Participants	Record
Subcontractor meetings	Weekly	Project team and subcontractors	Minutes of meeting
Project team meetings	Weekly	Project team	Minutes of meeting

Figure 9 *Project EMS Consultation Mechanisms*

5. Contractor Management

5.1 Evaluation and Selection of Contractors

All Multiplex Contractors (including subcontractors, suppliers and consultants) will be selected and appointed in accordance with Procedures BU AUS IMS P DIV 060 – *Contractor Management*, PAM P DIV 030 – *Tendering Subcontracts* and PAM P DIV 040 – *Letting of Agreements*.

Multiplex's procurement processes ensure that all contractors engaged must meet the environmental Management requirements. This is achieved by:

- » Documenting and correctly completing subcontract agreements, supplier agreements and consultant deeds that include a scope of work and environmental requirements
- » Examination and evaluation of subcontractor's demonstrated experience and capabilities
- » Selecting appropriate subcontractors and suppliers for tender
- » Conducting a tender interview to verify the environmental requirements related to the contract can be met
- » Evaluation, recommendation and seeking approval from senior management for engagement of the preferred contractor.

5.2 Subcontractors Environmental Management Plans and EWMS

All subcontractors are required to operate with the requirements of the EMP and associated documents.

Based on the EMP and risks identified in the Project Risk Assessment, MPX will assess the subcontractor's environmental management strategies against the following:

- » The potential environmental impacts of the subcontractor's activities
- » The environmental sensitivity of the area(s) in which the subcontractors will be working
- » The nature and scope of the subcontractor's activities
- » The scale of the subcontractor's activities
- » The subcontractor's capacity to manage its own environmental performance effectively
- » The subcontractor's previous performance.

Where a subcontractor is determined to be working in an area identified as high risk for potential impact to the environment, additional management controls will be put in place. These may include the submission of a dedicated EMP / EWMS to address the specific work package(s) awarded and be submitted for review to MPX prior to commencement of work on site. Comments resulting from the review by Multiplex will be issued to the subcontractor for action and where required, re-submission. The EMP / EWMS must assess the level of environmental risk and implement appropriate management controls for the subcontractor's full scope of work.

EWMSs are aimed specifically for use by foremen and construction workers and are reviewed by each member of the work team before they commence work. This review provides an opportunity for the work team to contribute to environmental controls and ensure that the work team is trained in environmental methods. Changes to EWMSs are documented and communicated to workers prior to commencing changed methods.

5.3 Contractor EMS Submission Requirements

A summary of the subcontractors EMS submission requirements is outlined in the table below.

Item	Description	Time Frame / Frequency of Submission
1	Project Environmental Management Plan for selected trades determined by Multiplex	10 days before commencing on site.
2	Environmental Work Method Statement (EWMS) for all high activities	10 days before commencing on site.
3	Incident/Near Miss Report	Following an incident

Item	Description	Time Frame / Frequency of Submission
4	Incident Investigation Reports	Following an incident
5	MPX Inspections – completed and signed off	As per timeframe nominated in report
6	Inspection and Monitoring Records as detailed in each Environmental Sub-Plan	As per Environmental Sub-Plan

Figure 10 Summary of Subcontractor Environmental Submission Requirements

5.4 Subcontractor Environmental Management Monitoring

Multiplex will monitor work activities in accordance with Procedures BU AUS IMS P DIV 060 – *Contractor Management* – to ensure that subcontractors are carrying out work in accordance with SWMS documentation. Monitoring may be achieved by one or more of the following:

- » Ongoing visual inspections by supervisors
- » Environmental inspections
- » External Inspections/Audits.

5.5 Purchasing of Goods and Services

Multiplex personnel responsible for the procurement of materials, plant and equipment will ensure that the requirements outlined in Procedures BU AUS IMS P DIV 060 – *Contractor Management* – are implemented to ensure compliance with the relevant Australian Standards and environmental legislation.

Where goods such as materials, plant and equipment are procured, procedures for complying with environmental specifications will be implemented and will cover all environmental standards, legislation or organisational compliance requirements.

Items and equipment that are used to execute the work potentially impacting on the health and safety of a worker of the public, will be subject to hazard identification and risk assessment prior to purchase or hire.

Workers or their WHS Representatives will be consulted regarding any purchasing decisions that could affect their health and safety.

6. Risk Management

6.1 Risk Workshops

Multiplex and its subcontractors will undertake risk workshops outlined in the table below. Further detail relating to risk management is detailed in Procedure BU AUS IMS P DIV 020 – *Risk and Opportunity Management*.

Type of Risk Programme	Purpose	Frequency	Participants	Record
Project EMS Risk Workshops	To identify key EMS aspects, impacts and develop control strategies for all works associated with the project	Six monthly intervals	Project Team, WHS&E Manager / Coordinator	Project Risk Register
High-Risk Workshops	To identify key HS&E aspects, impacts and develop control strategies for all works associated with the project	As per schedule	Project Team, WHS&E Manager / Coordinator	Project Risk Register

Figure 11 Risk Workshops

6.2 Aspects and Impacts

Key activities carried out by or on behalf of MPX in connection with the Project are identified in the Environmental Aspects and Impacts Risk Register outlined the Environmental Risk Register on Connect team site. This register is completed during the preliminary risk assessment process to help establish key project risks in accordance with Procedure BU AUS IMS P DIV 020 – *Risk and Opportunity Management*.

		Likelihood				
		Almost certain	Likely	Possible	Unlikely	Rare
Consequence	A. Extraordinary	1	2	4	7	11
	B. Major	3	5	8	12	16
	C. Moderate	6	9	13	17	20
	D. Minor	10	14	18	21	23
	E. Insignificant	15	19	22	24	25

Figure 12 Consequence and Likelihood Matrix

6.3 Environmental Controls Map

An Environmental Controls Map has been prepared for the Project to include key information from the sub-plans and other sources.

This Environmental Control Map will be implemented on the project and monitored as part of the inspection and testing program outlined in this plan.

The plan will be displayed on site notice boards, and include

- » The worksite layout and boundary
- » Location of the nearest noise sensitive receivers
- » Sediment and erosion control measures
- » Noise barriers

- » Site offices
- » Construction traffic routes within and adjacent to the worksite
- » Dust control measures
- » Monitoring equipment (e.g. dust and noise monitors)
- » Location of environmentally sensitive areas (e.g. conservation areas, protected trees)
- » Location of heritage (indigenous and non-indigenous) items (e.g. artefacts, registered sites)
- » Location of spill containment and clean-up equipment
- » Location of hazardous substance storage
- » Stormwater drainage and watercourses
- » Location of worksite waste management facilities
- » Demolition works.

7. Training and Competency

7.1 Training and Competencies

Multiplex is committed to achieving and maintaining high standards in training and development.

Multiplex will implement systems in accordance with Procedure BU AUS IMS P DIV 110 – *Training and Competency* – to ensure employees have the required skills and training to competently perform required tasks. Multiplex will maintain a training program that identifies:

- » The training required to meet statutory and legislative obligations
- » The training required for each role or position to meet the required competencies
- » A schedule of required refresher training.

Training programs will remain current and be reviewed at least annually or:

- » When new or unforeseen workplace requirements are identified
- » Following significant changes to the division's business operation
- » Following a significant incident
- » Following changes in legislation
- » Following feedback from employees.

Multiplex will review the training programs to ensure that the training has been effective.

7.2 Induction Training

The Project has developed induction programmes for Project personnel. The project induction outlines key environmental issues. All personnel directly or indirectly working on the Project, including sub-contractors, are required to complete the induction prior to starting work, and will be provided with identification to show they have been inducted. The environmental induction will be periodically reviewed for adequacy.

The project induction includes the following environmental aspects:

- » Key issues relating to the project and existing environment, such as ecological and heritage conservation areas
- » Relevant environmental requirements, relevant conditions of planning approvals and environmental licences, and the obligations of all staff in relation to compliance with approvals and licences
- » Environmental policy
- » Site specific issues, such as:
 - Waste management and minimisation
 - Washing, refuelling and maintenance of vehicles, plant and equipment
 - Efficient use of plant, equipment and materials
 - Minimising potential environmental impacts including noise, air and water quality
 - Site-specific erosion and sedimentation controls, and use of spill kits to contain spills
 - Environmental emergency plans, and incident reporting procedures for environmental harm/incidents.

7.3 Toolbox Meetings

Where deemed necessary toolbox meetings are used to highlight specific environmental and community issues relevant to site personnel. Toolbox meetings will be held as required.

A signoff sheet is completed by all personnel in attendance at toolbox meetings to acknowledge understanding of the information provided.

8. Incident and Emergency Management

8.1 Incident Management

Multiplex maintains a uniform system for the management and investigation of incidents which is outlined in Procedure BU AUS IMS P DIV 100 – *Incident Management*.

All incidents and near misses will be investigated by competent personnel, reported and recorded in the electronic database and conducted in line with the requirements set out in the internal investigation proforma and procedures. All incident investigations will identify the root causes of the incident so that appropriate remedial and preventative control measures can be identified and implemented.

Where required and where possible, incidents will be reported to EPA.

Corrective actions resulting from incident investigations will be prioritised and carried out in accordance with defined priorities. The corrective action will be evaluated for its effectiveness and whether the initially identified deficiency has been corrected and prevented from recurring.

8.2 Emergency Management

Emergency situations are to be managed through Procedure BU AUS IMS P DIV 100 – *Incident Management and include:*

- » An Emergency Management Plan details a single set of emergency contacts and procedures, consistent with the Project activities that can be scaled as appropriate for any incident or emergency
- » A Site Evacuation Diagram identifies the locations of emergency assembly points, fire exits, first aid kits and associated equipment, directional flow of pedestrian traffic and firefighting equipment
- » A Crisis Management Plan which provides guidance, details, responsibilities and lines of communication for effective emergency management.

Relevant details of the Emergency Management Plan will be provided to all personnel during the site induction, and information posted on notice boards.

9. Inspections, Testing and Monitoring

9.1 Environmental Site Inspections

To ensure compliance with both regulatory requirements environmental inspections detailed in the table below will be implemented in accordance with Procedure BU AUS IMS P DIV 070 – *Inspection Testing and Monitoring*.

The outcomes and status of inspection activities will be recorded in inspection reports and issued to the persons delegated with responsibility for rectifying the impact. The onsite WHS&E Coordinator will be responsible for tracking actions resulting from all inspections.

Type of Inspection	Inspection By	Frequency	Record
General	All Supervisors	Daily	Visual
Environmental Impacts	Environmental graduate	Fortnightly and after a shower / rain event.	Environmental Site Inspection
Environmental Impacts	WHS&E Manager / Coordinator	Monthly	Site Inspection Report
Other	Project Team / Subcontractors	As per Environmental sub-plans	As per Environmental sub-plans

Figure 13 EMS Inspection Programme

9.2 Environmental Site Testing and Monitoring

To ensure compliance with regulatory, testing and monitoring requirements, all monitoring and testing will be conducted in accordance with the environmental sub-plans outlined in section 13 and Procedure BU AUS IMS P DIV 070 – *Inspection Testing and Monitoring*.

10. Audits and Non-Conformances

10.1 Audits

An EMS auditing programme outlined below will be established and implemented to assess compliance, identify trends, drive continual improvement and provide assurance that management processes are being effectively implemented and that performance objectives are being met.

Audit procedures including the scope, frequency and methodology to be used as well as the responsibilities and requirements for conducting audits and reporting results will be in accordance with Procedure BU AUS IMS P DIV 120 – *Internal / External Auditing*.

Type of Audit	Audit By	Frequency	Purpose	Record
Internal EMS audit	WHS&E Manager / Coordinator	Six monthly	To confirm compliance against the MPX EMS.	Audit Report
External surveillance audits	External certified organisation	As per schedule	To confirm compliance of the MPX EMS and AS/NZS 14001.	Audit Report

Figure 14 EMS Audit Programme

Audit results will be recorded and an action plan developed identifying the observations and corrective action required against each of the findings in the audit report. Details of any non-conformance reports will be issued in accordance with Procedure BU AUS IMS P DIV 080 – *Control of Non-Conformances*.

A follow-up audit will be carried out, as deemed necessary by the auditor, to verify and record the implementation and effectiveness of the corrective action taken. Implementation and effectiveness of the corrective actions will be verified and recorded during follow-up. Audits will be closed out in a timely manner.

10.2 Non-Conformances, Corrective and Preventative Action

Deficiencies identified during audits, site inspections or observations of day-to-day operations will be generally recorded on the audit report or inspection report/checklist and actioned.

When non-compliance is identified, Multiplex will document the issue on the Non-Conformance Report in accordance with Procedure BU AUS IMS P DIV 080 – *Control of Non-Conformances* – on Aconex identifying the non-conformance and corrective actions. Where appropriate, the recipient and/or Multiplex will also develop measures to prevent recurrence of the non-conformance. The instigator will carry out a follow up review and closeout of the Non-Conformance Report to verify completion of measures taken to rectify and to prevent recurrence of the Non-Conformance within the specified time frame.

11. Document and Records Management

11.1 Document Control

Multiplex’s system of document management and record keeping is detailed at Procedure BU AUS IMS P DIV 050 – *Document and Records Management*. The EMS documentation is maintained in electronic format on Multiplex Operating System and describes and provides direction to the core documents that make up the system. The documentation consists of the following:

- » Policy statements which summarise and detail Multiplex high level commitment to the implementation of the EMS
- » Management System Operating Procedures to effectively and efficiently manage projects from feasibility and planning phase’s right through to the design and construct phases of a project
- » Supporting materials including Forms, Guides and Management Plans provide the tools to ensure conformance with operational procedures.

Project documentation will be controlled in accordance with the Procedure BU AUS IMS P DIV 050 – *Document and Records Management* – which defines the controls to ensure that:

- » The documentation is periodically reviewed, revised as necessary and approved for adequacy prior to issue
- » The documentation is current, readily identifiable and available at all points of use
- » The staff are immediately notified of any changes in the documentation such as, the development or receipt of new documentation and any amendments to the current documentation
- » The documentation of external origin is registered and regularly reviewed for currency
- » The obsolete documents are appropriately identified and archived.

11.2 Record Control

The Project will maintain records in Aconex (web-based document control system), S: Drive and other applications as defined in the table below to demonstrate conformance to specified requirements and to ensure the effectiveness of the operation of the EMS. Pertinent EMS records from subcontractors will be an element of this data.

Record	MPX OP System	Aconex	Share Drive	CHEMALERT	SIMPEL
MPX Management Plans	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Subcontractor EMP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Subcontractor EWMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Permits	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Incident and Investigation Reports	<input type="checkbox"/>				
Inspection and Test Reports	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Audit Reports	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Safety Data Sheets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Meeting Minutes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Toolbox Meetings	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental Risk Workshops	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Induction Records	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Training Records	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reports	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Monitoring Records	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental Complaints	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Figure 15 Records Management

12. Reporting

The Project will establish and maintain a uniform system of record keeping enabling accurate reporting of EMS matters in accordance with Procedure BU AUS IMS P DIV 130 – *Reporting*. Reporting on environmental matters will include those outlined in the table below.

Type of Report	Report By	Frequency	Recipient/s
Monthly PCG Report	Project Manager/Site Manager	Monthly	Client, Client's Representative and Regional Director.
Environmental Incident Notification	Project Manager/Site Manager	As required	Directors, WHS&E Manager/Coordinator and DEC where required.
Environmental Incident Investigation Report	Project Manager/Site Manager or others nominated by Project Manager /Site Manager	As required	Directors, WHS&E Manage/Coordinator and DEC where required.
Environmental Internal Audit Report	Project Manager / Site Manager / Environmental Manager	As per audit schedule	Project Team and WHS&E Manager/Coordinator
External Surveillance Audit	External Auditor	As required	WHS&E Manager/Coordinator, Systems Manager, Directors, Project Manager

Figure 16 EMS Reporting Programme

13. Environmental Management Sub Plans

13.1 Construction Noise and Vibration Management Sub-Plan

13.1.1 Objectives and Targets

Objective	Target	Key Performance Indicator
To ensure any works causing noise or vibration do not affect nearby structures or residents.	No complaints from the community regarding noise or vibration.	No. of complaints from residents / businesses related to noise.
Compliance with State and Local requirements as required.	Compliance with the Environmental Protection (Noise) Regulations 1997 - Section 6 of AS 2436-2010 (Standards Australia, 1981). Compliance with 10mm/s vibration limit or as otherwise specified.	Results from environmental inspections Noise and vibration monitoring records

13.1.2 Management Strategies

Parameter	Action	Timing	Responsibility
Construction Work	All construction work to take place during the hours as determined in the SSD Consent.	Construction	All Subcontractors
Plant and Equipment	Plant and equipment noise control equipment to be maintained in accordance with manufacturer's specification to reduce noise levels.	Construction	All Subcontractors
Plant and Equipment Noise Control	All mobile machinery and stationary equipment to be fitted with noise control equipment as per the manufacturer's specifications.	Construction	All Subcontractors
Noise Monitoring	A Noise Management Plan has been prepared by an appropriately qualified external consultant and attached to this CEMP. Noise monitoring to be undertaken – with three (3) unattended noise and vibration monitors at the following locations: » West boundary of R1 » West boundary of R3 » South boundary of I3	Establishment / Construction	MPX / Subcontractor
Vibration Monitoring	Real-time vibration monitoring to be carried out at the commencement of, and during identified vibration intensive works to manage vibration risk.	Establishment / Construction	MPX / Subcontractor
Noise / Vibration – Control Measures	If noise and / or vibration complaints are received, the following techniques should be considered to reduce impact to adjoining owners: <ul style="list-style-type: none"> Undertake works outside of adjoining building operating hours / peak hours as per the approved Noise Management Plan Isolate work activity using noise barriers Use smaller machinery or quieter alternative. Provide noise and vibration monitoring throughout as per the Noise and Vibration Management Plan. 	Construction	MPX / Subcontractor
Communication and Notification	A contact list to be prepared to enable nearby residents and owners to be notified regarding works that may impact them because of noise and vibration. This will be managed in accordance with the Communication Management Plan and approved Noise Management Plan (where applicable).	Establishment / Construction	MPX

Parameter	Action	Timing	Responsibility
Complaints	Where a complaint is received regarding noise and vibration, the complaint will be investigated and where appropriate, additional control measures will be taken to address the nature of the complaint	Demolition/Civil/Construction	MPX

13.1.3 Monitoring and Reporting

Type of Monitoring / Reporting	Timing	Responsibility	Record
Vibration monitoring as per the Construction Noise & Vibration Plan	At commencement and during excessive vibration	MPX	Vibration monitoring records
Noise monitoring as per the Construction Noise & Vibration Plan	At commencement and during excessive Noise	MPX	Noise monitoring records
Integrity of noise control equipment (if deemed applicable)	During construction	MPX / All Subcontractors	Environmental Site Inspection
Number of noise and/or vibration complaints	As required	MPX	Communications Register

13.2 Dust and Air Quality Management Sub-Plan

13.2.1 Objectives and Targets

Objective	Target	Key Performance Indicator
Ensure that dust or odour emissions do not adversely affect the health or visual amenity of surrounding communities.	No complaints from adjoining owners in relation to dust emissions from the works.	No. of public complaints from the public related to dust.
Compliance with State and Local regulatory requirements in relation to dust management.	No visual evidence of deposited dust or suspended particulate matter. Compliance with National Environment Protection Measures (NEPM) standards (where required) and DEC standards during construction.	Visual monitoring of dust movement during environmental inspections. Dust monitoring results (where required).

13.2.2 Management Strategies

Parameter	Action	Timing	Responsibility
Stabilised Driveways	A stabilised driveway is to be installed to minimise the tracking of dirt on public roadways.	Establishment	MPX
Dust Control Method – Physical Barriers	A physical barrier can be erected perpendicular to prevailing winds prior to the commencement of works along the boundary or around uncontrolled dust sources. Fences can be standard hoarding panels / fence or a fence with a screening material with a porosity of 50% or less.	Establishment	All Subcontractors
Dust Control Method – Chemical Stabilisation	Where an exposed area or stockpile is located away from traffic and needs to sit for up to 3 months or where an area needs immediate stabilisation, a chemical soil stabiliser can be used such as Zerision or the area hydromulched (seed free).	Construction	Bulk Earthworks / Civil / MPX
External Roads	If any sediment is deposited onto the roads adjoining the site, the roads are to be swept regularly and including prior to any rainfall. No hosing is to be undertaken external to the site. During civil activities, rumble grids or wheel wash stations are to be established at the traffic exit to external roads.	Construction	MPX
Haul roads	Haul roads to be covered with gravel / road base to minimise dust production or at best concrete to be regularly swept.	Construction	MPX
Speed limits	The speed of all vehicles on-site to be restricted to 10 km/hr. This speed to be further reduced if large amounts of dust are still being generated.	Construction	All Subcontractors
Windy Conditions	Dust-generating activities are to be assessed during periods of excessively windy conditions (>40km/h).	Construction	All Subcontractors
Water Carts/ Sprays	Water carts or sprinklers are to be used for specific process activities that may cause dust and can be used to assist in the dust control on access tracks. Consideration should be given to water efficiency and the possible use of a dust control method above.	Construction	Excavation / Demolition Subcontractor
Housekeeping	During construction the site to be kept clean to reduce dust lift off during windy days.	Construction	All Subcontractors
Plant and Equipment Maintenance	All construction plant and equipment with access to the site to be properly maintained and serviced in accordance with the manufacturer's specification. During the works maintenance logs are to be maintained and available during inspections and audits.	Construction	All Subcontractors

Parameter	Action	Timing	Responsibility
Exhaust Fumes	Operating machinery and vehicles to be visually checked to ensure exhaust fumes are not discharged into adjoining buildings air intakes.	Construction	All Subcontractors
Truck Transportation	Trucks transporting materials such as sand, soil, landscape materials, and gravel need to have loads covered and tailgates secured.	Construction	All Subcontractors
Paint-Spraying	Paint-spraying activities are not undertaken in adverse weather conditions or near building air intakes.	Construction	All Subcontractors
Exposed Areas	Staging of exposed areas will be programmed to minimise the exposed earth footprint to reduce dust generation.	Construction	All Subcontractors
Hazmat	Any Hazmat discovered on the project to be left undisturbed and subsequently managed in accordance with the WHS Management Plan. Asbestos or other containment material found in ground will require assessment in accordance with State requirements. Refer to WHS Handbook Rev 3 – Asbestos Lead Dust/Paint	Construction	All Subcontractors
Sweeping	Where applicable, sealed roads to be swept to remove deposited material that could generate dust.	Demolition, Excavation and Construction	All Subcontractors
Complaints	Where a complaint is received regarding dust, the complaint will be investigated and where appropriate, additional dust control measures taken to address the nature of the complaint	Construction	MPX

13.2.3 Monitoring and Reporting

Type of Monitoring / Reporting	Timing	Responsibility	Record
Inspect dust control measures, to ensure they are in place and implemented.	Fortnightly	MPX	Environmental Site Inspection
Visually inspect emissions from plant to ensure they are not contributing to ill health effects.	Fortnightly	MPX	Environmental Site Inspection
Dust monitoring in response to community complaints or in accordance with regulatory requirements.	As required	MPX	Dust monitoring records

13.3 Water Quality Management Sub-Plan

13.3.1 Objectives and Targets

Objective	Target	Key Performance Indicator
Avoid the release of contaminants to waterways or drainage systems.	All water discharged complies with minimum water quality criteria.	Water quality records conforming to minimum water quality criteria (where applicable). No breaches of management strategies in applicable Management Plans. Results from environmental inspections.
Ensure that groundwater quality or height is not significantly affected by the construction.	No significant change in groundwater levels and quality during dewatering activities (if applicable).	Groundwater quality reports.

13.3.2 Management Strategies

Parameter	Action	Timing	Responsibility
Dewatering for construction purposes	<p>Water to be discharged from sediment basins or similar must be tested and, if required, treated to ensure that it meets water quality criteria, and that pollution of the receiving waters does not occur.</p> <p>Results of testing and details of any treatment undertaken must be documented i.e. MPX water Discharge Permit, photographic evidence (photograph of the PH strip and Turbidity tube)</p> <ul style="list-style-type: none"> » Turbidity: <50 NTU » Suspended solids: <50 mg/L (Nata tested) » pH: 6.5-8.5 » Oil and Grease (visual only) <p>The discharge must be monitored throughout to ensure that the water being pumped;</p> <ul style="list-style-type: none"> » complies with the discharge criteria » Does not come into contact with any soil or exposed surfaces before discharging does not mix with any sediment laden/untested water at either the inlet or outlet. » Water must never be discharged or reused onsite in a manner that exceeds the capacity of sediment controls and/or generates runoff with the potential to discharge from site. 	Establishment	MPX / Excavation Subcontractor
Acid Sulfate Soil	The project location will be assessed against the NSW SEED database (ASS Risk Map) to assess the risk of the project environment.	Establishment / Construction	MPX / Excavation Subcontractor
Trade Waste	Installation of a 3 x 1m ³ settlement system for wet-trade washout to be completed	Establishment	Hydraulic Subcontractor
Toolbox meeting	All construction personnel undertaking discharge of water to on-site or off-site areas to undergo a toolbox meeting to ensure the correct controls are in place.	Establishment	MPX / Subcontractor
Static Concrete Pumping	A designated washout area and purpose built bunded structure to be provided for concrete pumps and their attachments.	Establishment	Concrete Subcontractor
Mobile Concrete Pumping	An impervious catch tray to be placed below the pump's hopper to contain any possible spillage or droppings. Concrete washout to be undertaken in designated concrete washout area.	Construction	Concrete Subcontractor
Concrete Truck Washout	Concrete trucks are not allowed to wash out on site.	Construction	Concrete Subcontractor

Parameter	Action	Timing	Responsibility
Spills	<p>All spills on site of hazardous chemicals to be cleaned up immediately to minimise pollution of stormwater/groundwater.</p> <p>If water is contaminated by hazardous chemicals requires discharge it will need to be sampled and analysed before release to ensure it meets water quality criteria.</p> <p>If contaminated, and cannot be treated on the project, it will need to be removed and treated by an appropriately licence waste contractor.</p>	Construction	MPX / Subcontractor
Chemical Storage	Paint, form oil, solvents and fuels to be stored correctly and banded in accordance with Chemical Management Sub-plan.	Construction	All Subcontractors
Paint Washout	The painting subcontractor is required to wash out into purpose-built tanks that are to be removed by the painting contractor through a licensed liquid waste facility with an arrangement to attain verifiable proof of disposal.	Construction	Painting Subcontractor

13.3.3 Monitoring and Reporting

Type of Monitoring / Reporting	Timing	Responsibility	Record
Dewatering process and water quality results	Daily (while dewatering) or as specified in the management plan	Supervisor / Onsite WHS&E Coordinator	Environmental site inspection Water Discharge permit
Monitor abstraction of ground water to ensure compliance with licence	Weekly or as per licence requirements	Supervisor / Onsite WHS&E Coordinator	Environmental site inspection Abstraction records
Trade waste and washouts	Weekly	Supervisor / Onsite WHS&E Coordinator	Environmental site inspection

13.4 Erosion and Sediment Control Management Sub-Plan

13.4.1 Objectives and Targets

Objective	Target	Key Performance Indicator
Prevent clay, silt or sand from entering stormwater drains and waterways.	All disturbed stormwater to pass through primary erosion and sediment controls listed below.	Environmental Inspection records of no uncontrolled release of disturbed stormwater to drains and waterways.

13.4.2 Management Strategies

Parameter	Action	Timing	Responsibility
Erosion and Sediment Control Plan	For sites with a soil disturbance less than 2,500m ² and with slopes <10%, an Erosion and Sediment Control Plan is to be prepared in accordance with MPX minimum requirements. For sites with a soil disturbance greater than 2,500m ² or on a site with a slope of >10%, an Erosion and Sediment Control Plan is to be prepared by a Certified Practitioner in erosion and sediment control. The plan is to be attached as an Appendix to the Construction Environmental Management Plan.	Establishment	Multiplex
Minimum Requirements for sites <2500m ² and less <10% slopes	<ul style="list-style-type: none"> » Evaluate site limitations: <ul style="list-style-type: none"> - Isolate retained vegetation from clearing with tape - Identify highly erodible soils with advice from geotech - Identify up-slope drainage catchments to be diverted around works - Identify work areas to allow for erosion and sediment controls. » Stabilise all site entry / exit points in accordance with MPX minimum requirements. Inspect all vehicles for residual mud and remove before leaving the site. Street sweeping (never hosing down) is to be carried out to reduce sediment on roads. » Install sediment fence(s) down-slope of the site. Treat sediment laden water with the use of sediment fencing installed in accordance with MPX minimum requirements to allow ponding. » The runoff from any slope catchment area exceeding 1,500m² is to be diverted around works. The diversion drain is to be appropriately lined to prevent erosion and discharged to lawful stormwater connection outlet. » Clear only those areas necessary for building works to occur. » Strip and stockpile any weed-free topsoil to be reused in re-vegetation works. Ensure the top soil stockpile is long and low to maintain aeration and microbiological properties and ensure it is stabilised to prevent erosion. » All stockpiles are to be located away from drainage areas and surrounded with sediment fence or covered with a product that will prevent erosion if in an area where it has the potential to enter the stormwater system. All stockpiles stored for longer than 2 weeks are to be covered to prevent erosion. » Prevent erosion by mulching areas that have achieved final levels but are not ready for landscape works immediately. For completed areas ensure appropriate top soil is available and establish grass cover within 10 days. » Commence building activities. » Ensure all runoff from concreted and roof areas is immediately connected to the stormwater. » Regularly inspect all drainage, erosion and sediment controls and maintain. » Progressively re-vegetate / stabilise the site. 	Establishment / Construction / Completion	Multiplex

Parameter	Action	Timing	Responsibility
	» Remove any remaining temporary drainage, erosion and sediment control measures upon complete stabilisation of the site.		

13.4.3 Monitoring and Reporting

Type of Monitoring / Reporting	Timing	Responsibility	Record
Inspect erosion and sediment controls are effective and maintained	Fortnightly or after a shower / rain event.	Multiplex/SubContractor	<ul style="list-style-type: none"> » Environmental Site Inspection » Erosion and Sediment Control Plan

13.5 Chemicals Management Sub-Plan

13.5.1 Objectives and Targets

Objective	Target	Key Performance Indicator
Avoid contamination of soil and water from chemicals.	No release of chemicals/pollutants as listed under the Environmental Protection (Unauthorised Discharges) Regulations 2004, into the environment during construction.	No instances of uncontrolled spills.

13.5.2 Management Strategies

Parameter	Action	Timing	Responsibility
Hazardous Chemicals	Safety data sheets which outline the procedures for handling, storage and emergency response for all hazardous chemicals stored or used on the Project, to be available in the first aid facility.	Establishment	MPX
Spill Kits	Spill kits are to be established at locations adjacent to where chemical spills have the potential to occur. The spill kits are to be maintained and readily available in the event of a spill.	Establishment	MPX / All Subcontractors
Toolbox Talks	Toolbox talks will be undertaken in the use of spill kits and the steps taken in the event a spill.	Construction	MPX / All subcontractors
Tank and Mobile Tankers	Tank and mobile tankers to be fitted with a screw fitting or overflow protection connected to prevent leaks.	Construction	All subcontractors
Bunds	Bunds capable of storing 110% of the largest container volume to be installed around areas where chemicals are stored. The bund is to be impervious, chemically resistant and fire resistant. Further, the bund is to be protected from weather to avoid the potential of rain reducing the bund capacity. Must be compliant with AS 1940 -2017- The Storage and handling of flammable and combustible liquid	Construction	All subcontractors
Labelling of Chemicals	All chemicals and dangerous goods used on site to be appropriately labelled.	Construction	All subcontractors
Fuel Tankers	Fuel tankers to be equipped with an appropriate device to prevent overfilling. An emergency shut off valve is also to be installed.	Construction	All subcontractors
Handling of Chemicals	Handling of chemicals is to take place in a designated area where there is no potential for spills or contaminated run-off that could reach stormwater. Fuel stored on vehicles is to be stored in a spill tray or other approved container capable of handling a spill.	Construction	All subcontractors
Fuelling of Vehicles or Construction Plant	Refuelling is to take place in designated areas or where contaminated run-off could reach the stormwater. Fuel tankers will use a spill tray beneath the refuelling connection to prevent spills on ground.	Construction	All subcontractors
Fluid Leaks	Trucks that leak any sort of mechanical fluid will not be permitted on or adjacent to the site.	Construction	All subcontractors
Oil Contaminated Stormwater	Oil contaminated water is to be disposed of through a licensed waste facility by a licensed subcontractor.	Construction	All subcontractors
Minor Spills (<100L)	In the event of a spill, the spill kit is to be utilised, and the cleaned-up material taken to a licensed facility as trackable waste and reported.	Construction	All subcontractors

Parameter	Action	Timing	Responsibility
Major Spills (>100L)	In the event of a major spill, the procedures contained in the Emergency Management Plan are to be implemented and reported.	Construction	All subcontractors
Volume of Fuel and Chemicals	Volumes of fuels and chemicals kept on site are to include only those volumes necessary to complete the works within a reasonable delivery schedule.	Construction	All subcontractors
Solvent Based Paints	Containers of solvent-based paints are to be disposed of at an appropriate recycling depot by the subcontractor and a verifiable receipt or docket retained on file by the subcontractor and produced upon request to Site Management.	Construction	All subcontractors

13.5.3 Monitoring and Reporting

Type of Monitoring / Reporting	Timing	Responsibility	Record
Check all bunds are the appropriate size and they are functioning.	Fortnightly	Subcontractors / MPX	Environmental site inspection
Check all chemicals are labelled, stored in a container in good condition and in a bunded area.	Fortnightly	Subcontractors / MPX	Environmental site inspection
Check equipment is free from leaks.	Fortnightly	Subcontractors / MPX	Environmental site inspection
Check the spill kit is available and adequately stocked.	Fortnightly	Subcontractors / MPX	Environmental site inspection

13.6 Land Contamination Management Sub-Plan

13.6.1 Objectives and Targets

Objective	Target	Key Performance Indicator
To manage contamination in accordance with regulatory requirements.	No spread of contaminants onsite	No Environmental Notices issued to MPX. Waste disposal receipts (where applicable)

13.6.2 Management Strategies

Parameter	Action	Timing	Responsibility
Induction	During inductions all personnel are to be made aware of individual responsibilities regarding contamination management.	Establishment	All subcontractors
Contamination Investigation	Where a site is to have known contamination, and has not been remediated, a qualified environmental consultant/professional is to be engaged to determine whether a Contaminated Site Investigation is required. Where required, a Contaminated Site Investigation is to be carried out in accordance with State and Local Government requirements.	Establishment	MPX
Management of Contamination	Where contamination is found and requires additional management measures to that found in this EMP, a Remedial Action Plan is to be developed and attached to this EMP as an Appendix.	Establishment	MPX
Contaminated Water	Where contaminated water is proposed to be discharged a full site contamination analysis is to be undertaken on the water prior to works commencing and prior to discharge. Where water is found to be contaminant free in accordance with the ANZECC Water Quality Guidelines, water is to be discharged in accordance with the Water Quality Management Sub Plan. Where water is found to contain contaminates above the criteria in the ANZECC Water Quality Guidelines, water management is to be undertaken with advice from a qualified environmental consultant/professional.	Establishment	MPX / Excavation Subcontractor
Acid Sulfate Soils (ASS)	Where a project is in a known ASS risk area and involves excavation, dewatering, or compacting saturated soils or sediments then an ASS Investigation is required. The ASS Investigation and further management are to be undertaken with State and Local Government requirements. Any ASS Management Plan to be prepared by a qualified environmental consultant/professional and is required to be attached to this EMP as an Appendix.	Establishment	MPX / Excavation Subcontractor

Parameter	Action	Timing	Responsibility
Commissioning and decommissioning and removal of UPSS	<p>SAFEWORK NSW Requirements</p> <p>SafeWork NSW is responsible for the WHS issues relating to decommissioning and removal of tanks from a site.</p> <p>The following SafeWork NSW requirements must be met during decommissioning:</p> <p>the tank and contents made safe in line with Code of Practice: Storage and handling of dangerous goods & AS 1940: 2017 The storage and handling of flammable and combustible liquids</p> <p>SafeWork NSW to be notified of the abandonment within seven days, so the tank can be removed from their database.</p> <p>SafeWork licensed demolition contractors are authorised to carry out decommissioning, abandonment or removal of UPSS that have contained flammable or combustible liquids.</p> <p>Contractors with a restricted demolition licence are not authorised to do demolition of chemical installations unless they have made an application for an upgraded restricted demolition licence that authorises demolition of chemical installations</p> <p>PCBU's should ask for written confirmation that the work will be completed by a Safework NSW licensed demolition contractor who is not restricted for demolition of chemical installations.</p> <p><u>Installation/Commissioning of storage tanks.</u></p> <p>The tank must be installed and commissioned in line with POEO- UPSS Regs 2014 & AS 4897 The design, installation and operation of UPSS.</p>	Excavation	Excavation Contractor /Demolition Contractor
Excavated Materials	All excavated materials removed from the site is to be removed in accordance with the approved plan for the management of contamination and disposed of at a facility licensed to take that level of contamination.	Excavation	Excavation Subcontractor
Waste Transport Certificate	A Waste Transport Certificate for all contaminated material is required from the responsible contractor.	Excavation	Excavation Subcontractor
Unexpected Contamination	<p>If unexpected contaminants are identified, all associated activities are to be ceased, and a reassessment of the area/contaminants undertaken by a qualified environmental consultant/professional. Contamination is to be managed as per State and Local Government requirements.</p> <p>Refer to WHS Handbook Rev 3 – Flow Chart Unexpected Find Protocol</p>	Excavation	MPX / Subcontractor

13.6.3 Monitoring and Reporting

Type of Monitoring / Reporting	Timing	Responsibility	Record
Contamination Assessment	Commencement	MPX	Site contamination report / Acid Sulfate Soil Report
Management of Contaminated Material	Construction	MPX	Environmental site inspection Water quality records Remediation Report

13.7 Waste Minimisation and Management Sub Plan

13.7.1 Objectives and Targets

Objective	Target	Key Performance Indicator
Solid and liquid waste to be disposed of as per Regulatory requirements.	All waste to be disposed of by a licensed waste contractor	Onsite waste disposal facilities confirmed and documented.
MPX aim to maximise landfill diversion.	Recycle 80% of demolition and construction waste.	Waste reporting by waste contractors.
No waste to affect nearby premises.	No complaints related to construction waste affecting nearby premises during construction.	No. of complaints relating to waste.

13.7.2 Management Strategies

Parameter	Action	Timing	Responsibility
Induction	During inductions all personnel are to be made aware of individual responsibilities regarding waste management, including the understanding that all personal rubbish and construction rubbish generated is to be properly disposed of in designated disposal facilities.	Establishment	All subcontractors
Waste Reduction	Design in waste minimisation during the design phases by standard sizing of materials, the use of modular and prefabricated construction techniques. Stockpile clean fill during the excavation phase by for use as backfill on-site Provide sub-contractors during the construction phase with clear guidance for reducing packaging on their own materials by both their suppliers and subcontractors, by accurate ordering and handling of materials. Specify reusable, stackable and returnable packaging.	Establishment / Construction	MPX, Consultants and Subcontractors
Waste Management Plan	Demolition and excavation subcontractors will be required to develop a Waste Management Plan for their Scope of Work detailing the type of waste generated, waste avoidance / reduction / reuse / recycling strategies.	Establishment	Demolition and Excavation Subcontractors
Waste disposal Storage area	Appropriate waste disposal facilities (e.g. bins) shall be provided in strategic locations onsite. Waste bins shall be located such that they do not affect the community and not close to surrounding premises. Separation of waste for recycling will be enforced and monitored.	Establishment / Construction	MPX
	Waste disposal facilities shall be regularly collected or emptied by a licensed waste collector in accordance with Local Council Health Laws.	Construction	MPX
	Where possible a storage area allocated for the separation, collection and recycling of wastes will be established.	Establishment	MPX
Waste contractors	Licensed contractors shall be engaged to remove construction waste. A minimum target of 80% landfill waste diversion will be achieved.	Establishment	MPX
Putrescibles waste (Organic waste)	All putrescibles waste to be placed in a lidded bin and removed separately.	Establishment	MPX
Recycling / waste reduction	Recycling initiatives will be investigated and where practicable implemented onsite. This may include dedicated bins for different waste streams and use of alternative products.	Establishment / Construction	MPX / All subcontractors

Parameter	Action	Timing	Responsibility
Site office	The site office shall implement the following office waste minimisation techniques: <ul style="list-style-type: none"> » Organising recycling paper bins in the office for waste paper » Recycle toner cartridges pick-ups » Using electronic storage to reduce use of paper » Purchasing products in bulk to reduce packaging 	Establishment	MPX
Hazardous waste	Hazardous waste will be managed and disposed of as per the Safety Data Sheet requirements and Environmental Protection (Controlled Waste) Regulations 2004.	Construction	MPX / All subcontractors
Servicing	Where practicable plant will be serviced offsite to reduce the generation of hydrocarbon waste onsite and potential for spills.	Construction	All Subcontractors

13.7.3 Monitoring and Reporting

Type of Monitoring / Reporting	Timing	Responsibility	Record
Percentage of diversion from landfill	Monthly	MPX	Monthly Waste Report
Segregated waste and appropriate waste placement	Weekly	MPX	Environmental Site Inspection

13.7.4 Demolition and Excavation Phase Waste Management Plan

MATERIALS ONSITE	REUSE AND RECYCLING		DISPOSAL
ONSITE		OFF-SITE	
Type of Materials	Specify methods	Specify contractor and recycling outlet	Disposal
DEMOLITION			
Masonry, brick & tile	General waste bin	Transfer for reprocess or recycle - Demolition subcontractor	Divert from Landfill
Timber	General waste bin	Transfer for reprocess or recycle - Demolition subcontractor	Divert from Landfill
Metal	General waste bin / dedicated steel scrap bin	Transfer for reprocess or recycle - Demolition subcontractor	Divert from Landfill
Mixed waste	General waste bin	Transfer for reprocess or recycle - Demolition subcontractor	80% Recycling
Asbestos	As per standards	Transfer & disposal at hazardous landfill - Demolition subcontractor	Hazardous Landfill
Bitumen	General waste bin	Transfer for reprocess or recycle - Demolition subcontractor	Divert from Landfill
The demolition contractor prior to commencement shall develop a Waste Management Plan for the Project. Material shall be separated on site and removed in separate trucks for recycling, re-use and landfill.			
EXCAVATION			
Clean Fill	Assess, excavate & stockpile	Transport & fill	Nil
<i>Any hazardous waste will be isolated and managed as per the legislation for hazardous waste. 100% of the clean excavation material will be diverted from landfill.</i>			

13.7.5 Construction Phase Waste Management Plan

MATERIALS ONSITE	REUSE AND RECYCLING		DISPOSAL
ONSITE		OFF-SITE	
Type of Materials	Specify methods	Specify contractor and recycling outlet	Disposal
Concrete	General waste bin.	Transfer for reprocess or recycle - Waste contractor	Divert from Landfill
Masonry, Brick & Tile	General waste bin	Transfer for reprocess or recycle - Waste contractor	Divert from Landfill
Timber	General waste bin	Transfer for reprocess or recycle - Waste contractor	Divert from Landfill
Metal	General waste bin	Transfer for reprocess or recycle - Waste contractor	Divert from Landfill
Plasterboard	Separate in designated bin	Transfer for reprocess or recycle - Waste contractor & plasterboard recycler	Divert from Landfill
Cardboard	Separate in designated bin	Transfer for reprocess or recycle - Contractor to be confirmed	Divert from Landfill
Mixed waste	General waste bin	Transfer for reprocess or recycle - Waste contractor	80% Recycling
Paper	Separate in designated bin	Transfer for reprocess or recycle - Waste contractor	Divert from Landfill
Packaging	Separate in designated bin	Transfer for reprocess or recycle - Waste contractor	Divert from Landfill

Waste will be minimised through reduction of waste generated, reuse of products and recycling. The waste stream will be separated where possible to maximise landfill diversion. Subcontractors will be responsible for recycling and reuse of their waste material.

13.8 Indigenous and European Heritage Management Sub-Plan

13.8.1 Objectives and Targets

Objective	Target	Key Performance Indicator
Minimise impacts on unknown Cultural and Heritage sites.	Protection of all sites of European and Aboriginal Heritage significance, both known and yet unknown.	Immediate reporting of archaeological remains if discovered. Level of disturbance to significance sites recorded.

13.8.2 Management Strategies

Parameter	Action	Timing	Responsibility
Induction	Aboriginal Heritage protection related material will be included in workforce inductions.	Establishment	MPX / All subcontractors
General	Operations generating vibration and dust will be managed as per the relevant sections of this Plan.	Construction	MPX
Earthworks	Excavations are to be monitored as required by the ethnographic consultant.	Construction	The Client
Object discovery	Objects found during excavation works will be salvaged and managed according to advice from archaeologists. Location and nature of objects will be reported to the local heritage office, local Department of Indigenous Affairs (DIA) etc.	Early Works	MPX
Skeletal remains	If suspected skeletal remains found – works will cease immediately until all clear is given by Police, DIA and archaeologists.	Construction	MPX
	Suspected skeletal remains will be immediately reported to Police Service, local DIA office. If remains are found to be of an Aboriginal Heritage matter and not a police matter, they will be left in situ until a decision is made at an on-site meeting about how to proceed in respect to the remains.	Construction	The Client

13.8.3 Monitoring and Reporting

Type of Monitoring / Reporting	Timing	Responsibility	Record
Report findings to Client and relevant authorities	As required	MPX	Environmental Incident Report
Presence of official monitors during earth works (as required)	As required	MPX	Environmental Incident Report Attendance Records

13.9 Flora and Fauna Management Sub-Plan

13.9.1 Objectives and Targets

Objective	Target	Key Performance Indicator
To reduce the impact of construction on native flora and fauna.	No damage / injury to preserved flora and fauna.	Weekly Environmental Inspection

13.9.2 Management Strategies

Parameter	Action	Timing	Responsibility
Induction	Undertake a site induction addressing the management of flora and fauna including: <ul style="list-style-type: none"> » No employee on the Project will intentionally injure native fauna including reptiles. » Construction personnel are not to handle fauna. » All rubbish and food scraps must be placed in lidded bins that will be serviced regularly. » Native fauna are not to be fed by project employees. 	Establishment	MPX/ All subcontractors
Fencing and bunting	Fencing/bunting and signage is to be installed to protect vegetation identified for retention within the works area.	Establishment	MPX
Vegetation Clearing	A clearing permit must be obtained and approved from the relevant authority prior to any clearing works undertaken. Vegetation removal is to be minimised wherever possible by clearly defining designated work areas. Designated exclusion zones (i.e. retained vegetation) are to be made secure with fencing/bunting and signage.	Construction	MPX / clearing subcontractor
Arborist	All works carried out on either foliage or root systems will be carried out as per the Australian Standard 4970-2009 <i>Protection of Trees on Development Sites</i> and will be undertaken in consultation with a qualified Arborist.	Construction	MPX / Clearing subcontractor
Excavation	All trenches / excavations are to be inspected each morning by the excavation subcontractor. Where flora and fauna are discovered, personnel are to cease work in the subject area and notify the WHS&E Manager/Coordinator / MPX Supervisor / or appointed Catcher.	Construction	MPX / Excavation subcontractor
Unidentified Flora or Fauna	If any previously unidentified flora or fauna is discovered on-site, personnel are required to notify the Site Manager.	Construction	All subcontractors
Active Nests of Native Birds	Any trees or shrubs to be removed from the site are to be checked for the presence of active nests of native birds (i.e. those containing fertile eggs or nestlings) and arboreal mammals (e.g. possums) prior to removal or relocation by a Qualified Wildlife Spotter / Catcher.	Construction	All subcontractors
Rehabilitation	Monitor disturbed areas for weed invasion and undertake control measures as necessary. Regularly water, weed and fertilise rehabilitated areas to ensure their success.	Construction	MPX / Landscape subcontractor

Parameter	Action	Timing	Responsibility
Weed Management	<p>All declared weeds within the site are to be removed in accordance with the below procedures:</p> <ul style="list-style-type: none"> » The use of pesticides and herbicides is to be restricted, have specific application, storage and clean up procedures, and meet requirements of relevant agencies. » Herbicides are to be administered by contractors licensed in accordance with the provisions of State Legislation. » Chemical products must always be used as per Safety Data Sheets. » Only qualified personnel should undertake chemical control of weeds. » Correct disposal of weeds is to be undertaken ensuring accidental spread of weeds does not occur. Weeds or material containing weed matter must be transported to a landfill under covered load. The cover must seal the top and sides of the load to prevent any weed material being transported by wind. 	Construction	MPX / Landscape subcontractor

13.9.3 Monitoring and Reporting

Type of Monitoring / Reporting	Timing	Responsibility	Record
Protected trees	As per the DA	MPX	Environmental site inspection
Clearing Monitoring	Daily during clearing works	MPX / clearing subcontractor	Clearing inspection
Rehabilitation Areas	As per the DA	MPX	Environmental site inspection

13.10 Site Office Environmental Management Sub-Plan

13.10.1 Objectives and Targets

Objective	Target	Key Performance Indicator
Maximise the efficient use of resources within the office environment.	Recycle 100% office paper	Monthly Recycling Reports
	Recycle 100% of materials where available	Monthly Recycling Reports

13.10.2 Management Strategies

Parameter	Action	Timing	Responsibility
Use of Resources	Recycle office paper and cardboard cans, bottles and printer cartridges.	Commencement to completion	MPX
Use of Energy	Turn off electrical equipment where practicable and use energy efficient products.	Establishment to completion	MPX
Use of Resources	Use office paper with recycled content.	Commencement to completion	MPX
Double Sided Printing	Use double sided printing on photocopiers where possible.	Commencement to completion	MPX

13.10.3 Monitoring and Reporting

Type of Monitoring / Reporting	Timing	Responsibility	Record
Percentage of diversion from landfill	Monthly	Waste Contractor	Monthly recycling report.

14. Appendices

14.1 Appendix 1: Environmental Policy

MULTIPLEX

HEALTH, SAFETY, ENVIRONMENTAL AND QUALITY POLICY STATEMENT

This Policy applies to all employees, contractors, and other people at workplaces managed by Multiplex.

OUR COMMITMENT

Multiplex and its senior management are committed to:

- Protecting the health, safety and wellbeing of everyone within our workplaces including employees, contractors, visitors, public, neighbours and the community.
- Ensuring that our activities place minimal impact on the environment including pollution.
- Delivering projects that add economic, social and environmental value to our clients, our community and those who invest in us.

OUR STRATEGIES

Multiplex works collaboratively with key stakeholders, including our clients, regulators, industry peers, suppliers and contractors, to exceed our legal, contractual and other compliance obligations through the following key strategies:

- Managing risks and opportunities through early intervention in planning and design.
- Monitoring constantly the changing landscape over the project lifecycle and develop rigorous controls in response.
- Creating an outlook and culture in which our commitments are front of mind and part of everyday business.
- Valuing the competency (skills, knowledge and experience) of all persons to perform and find better ways of doing the work.
- Providing employees and other stakeholders the opportunity and expectation to acquire the appropriate competency to enable them to carry out their work safely without risk to themselves, fellow workers and the public.
- Focusing on open conversations between our employees, our clients and the people we work with not just paperwork.
- Creating a culture that encourages the reporting of incidents and occurrences to enable knowledge sharing, learning and information to facilitate improvements in performance.
- Promoting strategies that are driven and embedded by senior management who encourage ownership and continuous improvement in behaviours, practices and outcomes by all persons.
- Aligning our behaviour to our values with an emphasis on teamwork and recognition for innovation and initiative.



John Flecker
CEO – Multiplex
November 2022

Built to outperform.

14.2 Appendix 2: Construction Traffic Management Plan

Construction Traffic Management Plan

S4 Data Centre

Prepared for NEXTDC

23 February 2026

211085

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Revision Register

Rev	Date	Status	Prepared By	Reviewed By	Approved By
0	05/12/2025	Draft for comment	AA	SS	GC
1	09/12/2025	Updated Draft	AA	SS	GC
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1.0 Introduction

1.1 Overview

This Final Construction Traffic Management Plan (CTMP) outlines the management of construction traffic for the NEXTDC S4 Data Centre development located at 16 Johnston Crescent, Horsley Park (SSD-63741210).

This report has been prepared as a final version of the preliminary report, prepared for the purposes of the Construction Certificate (CC). This report includes detailed construction methodology input from Multiplex and TransGrid/Lumea.

The construction and operation of the S4 data centre development include site preparation works, bulk earthworks and infrastructure, and construction of the buildings, ancillary facilities, and associated HV cable/substation works.

This CTMP has been prepared to address the external HV cable connection route which will be required as part of the greater Data Centre works and associated substation at Stage 1. The HV route follows the existing roadways from the SSDA site via Johnston Crescent and Old Wallgrove Road and connects to Sydney West TransGrid substation. Additional works at the Sydney West TransGrid substation will include the extension of the existing substation bench to enable the construction of two new 330KV feeder bays.

The key features of the construction works are summarised as follows:

- Site preparation works including bulk earthworks including tree removal.
- Staged construction and operation of two data centre buildings comprising a total gross floor area (GFA) of 61,695m² including 56,464m² of technical data hall floor space and 5,231m² of ancillary office floor space, including 'front of house' meeting and administrative spaces.
- Ancillary development including a centralised security office building at the main vehicle entrance, on-site parking for 200 cars, business identification signage (pylon and elevation signage), civil and stormwater works and 12,769m² of deep soil landscaping.
- Provision of a high-voltage (HV) power connection delivering 294 megawatts of power, including a 330kV substation and a 33kV switching station, plus above ground diesel storage tanks and above ground water tanks for industrial water and fire water.
- The project will be delivered in four construction stages as follows:
 - Stage 1 = Building C, HV switching building, 330kV substation, HV external cabling route, entrance to site, centralised security office, and water tanks.
 - Stage 2 = Building D
 - Stage 3 = Building A
 - Stage 4 = Building B

Stage 1 comprises installing two 330 kV underground transmission cable circuits over ~2.6 km, primarily within existing road reserves along Johnston Crescent and Old Wallgrove Road, linking the NEXTDC S4 onsite substation to TransGrid's Sydney West Substation and traversing both Fairfield and Blacktown Local Government Areas (LGAs).

This CTMP addresses the construction impacts of Stage 1 and the following stages, including haul routes, work-zone/TGS arrangements, access and parking arrangements, impacts on existing traffic, pedestrian and bicycle networks impacts and mitigation measures.

Fairfield endorsed this CTMP on 20 February 2026 as outlined in the attached email correspondence in Appendix A.

1.2 Conditions of Consent

Taylor Thomson Whitting (TTW) has been engaged by NEXTDC to provide traffic engineering consultancy services for the development of the S4 Data Centre. The objective of this CTMP is to ensure safe and efficient movement of vehicles and pedestrians onto, off and around the site, whilst minimising and mitigating disruptions/impacts and maintaining a safe environment for both vehicular and pedestrian traffic external to the site during the construction process.

The contractor shall be responsible for acquiring the necessary certificates, licences, consents, permits and approvals relevant to the construction on this site.

A CTMP is developed to satisfy the duties of various work health and safety legislation, regulations, and codes of practice. Traffic Guidance Scheme (TGS) will also need to be developed for the future site to demonstrate the traffic control procedures to be implemented.

The project was approved under SSDA in December 2025. A CTMP is required in accordance with the Condition of Development Consent No. B29 as shown in Table 1 whereby sections of this report are provided in response to the requirements of the Condition.

Table 1: Condition B29

Key items	Comments and references
<p>Construction Traffic Management Plan:</p> <p>B29. Prior to the commencement of construction, the Applicant must prepare a Construction Traffic Management Plan (CTMP) for the development to the satisfaction of the Planning Secretary. The CTMP must form part of the development's CEMP in accordance with condition C2 and must:</p>	
(a) be prepared by a suitably qualified and experienced person(s);	This report has been prepared by qualified traffic engineers. CVs have been attached to Appendix C of this report.
(b) be prepared in consultation with Council/s;	This version will be used for Council consultation. Consultation records are recorded in the following Section 1.3
(c) detail the measures that are to be implemented to ensure road safety and network efficiency during construction;	Refer to Section 5.9
(d). detail heavy vehicle routes, access and parking arrangements;	Refer to Section 4.0
(e) provide details of any oversized vehicles required for construction;	Refer to Section 4.0
(f) provide details of traffic control measures (such as an escort or other suitable traffic control measure) to manage the movement of oversized vehicles along public roads;	Refer to 4.4
<p>(g) include a Driver Code of Conduct to:</p> <p>(i) minimise the impacts of earthworks and construction on the local and regional road network;</p> <p>(ii) minimise conflicts with other road users;</p> <p>(iii) minimise road traffic noise; and</p> <p>(iv) ensure truck drivers use specified routes;</p>	Refer to Section 6.0
(h) include a program to monitor the effectiveness of these measures; and	Refer to Section 3.2
(i) if necessary, detail procedures for notifying residents and surrounding businesses of any potential disruptions to routes.	Refer to Section 6.0

1.3 Council Consultation

1.3.1 Fairfield Council

This CTMP has been prepared in consultation with the design team, relevant stakeholders and Fairfield City Council (FCC). The items raised from the council consultation and the responses are summarised in Table 2 below. All correspondence has been included as Appendix A of this report.

Table 2: Council Consultation

Date of engagement	Council Item	Comments and references	Status
10 November 2023 - Email	<p>Urbis Planning and NEXTDC met with Fairfield City Council to discuss the project. Civil and structural engineer consultants, Taylor Thomson Witting (TTW), met with Fairfield City Council on 22 November 2023 to discuss the proposal.</p> <p>Council acknowledged the required technical documents outlined in the SEARs issued by NSW DPHI (dated 27 October 2023), and requested the proponent also address the following matters as part of the EIS package:</p> <ul style="list-style-type: none"> - Traffic and Parking Impact Assessment 	Council's feedback has been addressed and requested assessments have been included in the EIS.	Item Closed
<p>20 March 2025 - Email</p> <p>24 March 2025 - Telephone</p> <p>3 April 2025 - Email</p>	Consultation has been undertaken by NEXTDC with Fairfield City Council regarding the proposed HV connection.	Council confirmed they did not have any objections to the works associated within the road reserve to accommodate the required HV connection and provided detailed written advice regarding the relevant requirements to facilitate the work on Council owned land, including obtaining a Utility Works Permit under s138 of the Roads Act 1993.	Item Closed

<p>15 December 2025 – Email & telephone</p>	<p>Ongoing consultation has been undertaken by MULTIPLEX with Fairfield City Council regarding temporary accommodation on site, temporary driveway location, worker numbers, temporary parking, B class hoarding on Johnston Crescent and Construction timeframes.</p>	<p>Council have provided feedback on the necessary approvals required to facilitate temporary site accommodation and carparking.</p>	<p>Item Closed</p>
<p>17 February 2026 - Email 18 - 19 February 2026 Telephone</p>	<p>Consultation with Fairfield City Council has been undertaken by TTW with the final CTMP provided to Council.</p>	<p>Council have confirmed that they have received the final CTMP and will continue to engage with Multiplex for the up coming site establishment and construction works.</p>	<p>Ongoing for duration of the project</p>
<p>20 February 2026</p>	<p>Further updates to the TGS requested by Fairfield</p>	<p>The CTMP has been updated to include TGS plans without a Works Zone for stages where a Works Zone is not required (e.g. Stages 1 and 2). These updated TGS plans are provided in Appendix D.</p>	<p>Item Closed</p>
<p>20 February 2026</p>	<p>Confirmation of CTMP approval. Fairfield City Council has approval for the submitted Construction Traffic Management Plan and additional information. Council has noted that this approval does not include the hoarding component, which is being assessed separately by Council's Assets Engineers (refer to Appendix A).</p>	<p>CTMP will be updated to include approval conditions provided by Fairfield. The approval conditions are attached in Appendix A.</p>	<p>CTMP Approval received – Item Closed</p>

1.3.2 Blacktown City Council

This CTMP has been prepared in consultation with the design team, relevant stakeholders and Blacktown City Council. The items raised from the council consultation and the responses are summarised in Table 3 below.

Table 3: Council Consultation

Date of engagement	Council Item	Comments and references	Status
<p>19 March 2025 – Telephone</p> <p>25 March 2025 – Meeting with Council</p>	<p>Ongoing consultation has been undertaken by NEXTDC with Blacktown City Council regarding the proposed HV connection.</p>	<p>A meeting was held with Blacktown City Council on 25 March 2025 to discuss the process for obtaining owner’s consent. Council advised that further information on existing services within the proposed HV cable route is required before consent can be considered. The meeting concluded with NEXTDC confirming that additional design work is needed and will be provided to Council once finalised. Additional information was submitted to Council for their review in May 2025.</p> <p>On 12 August 2025, Blacktown City Council provided a letter providing consent to NEXTDC to enable the lodgement of the Amendment Report. NEXTDC will continue to engage with Blacktown City Council regarding the proposed works within Johnston Crescent and Old Wallgrove Road to deliver the HV connection, including obtaining necessary approvals.</p>	<p>Item Open – Ongoing consultation</p>
<p>17 February 2026 – Email</p> <p>18 February 2026 – Email</p> <p>19 February 2026 - Email</p>	<p>Ongoing updates to the CTMP have been provided to Council</p>	<p>Council confirmed that their key concern is the alignment of the required proposed HV cabling works within the road reserve which is subject to the Section 138 process (Road Opening Permit) that is currently under development.</p> <p>Should the S138 approval impact the currently</p>	<p>Item Open – Ongoing consultation</p>

		<p>documented alignment and construction traffic management strategy, a revised CTMP will be prepared and reissued for review by Blacktown City Council.</p> <p>Multiplex will continue to engage with council for the up and coming site establishment and construction works.</p>	
<p>20 February 2026 - Email</p>	<p>Blacktown Council has advised that it is currently liaising with NEXTDC regarding the proposed installation of the high voltage cables in Old Wallgrove Road, and that approval of the CTMP will be dealt with by Fairfield City Council.</p>	<p>Fairfield City Council's approval with conditions was received on 20/02/2026.</p>	<p>Item Closed</p>

2.0 Existing Conditions

2.1 The Site

The site is located at 16 Johnston Crescent, Horsley Park within the Fairfield Local Government Area (LGA). The site is legally described as Lot 305 in Deposited Plan 1275011.

An aerial photograph of the site is provided at Figure 1. The site comprises vacant land which has been cleared of vegetation and does not contain any existing built form structures. Bulk earthworks approved under DA-893-201 have been completed on site.

The site will be well serviced by infrastructure. The signalised intersection of Lenore Drive and Old Wallgrove Road at Eastern Creek is approximately 2 kilometres to the north, providing access to Wallgrove Road and the Westlink M7 Motorway to the east and Erskine Park Road and Mamre Road to the west. Each of these roads provides access to the M4 Motorway to the north and M5 Motorway to the south. A utilities and site services report will accompany the EIS.

The site is located approximately 35 kilometres west of the Sydney Central Business District (CBD), 17 kilometres west of the Parramatta CBD and 10 kilometres north-east of the future Western Sydney International (WSI) airport.

The site is within a developing employment precinct, including the ESR Horsley Logistics Park, Oakdale Central, Oakdale South and Horsley Park Employment Precinct. It is also close to other established and emerging employment-generating precincts, including Eastern Creek to the north, Huntingwood to the north-east, Wetherill Park and Mamre Road West to the north-west and Wetherill Park to the east.



Figure 1: Proposed staging of development design

Source: Nearmap

2.1.1 State Road Network

The state roads in the vicinity of the site are shown in Figure 2. To the north of the site, Old Wallgrove Road becomes a state road at its intersection with Lenore Drive, which is also a state road. The M7 and M4 motorways are also classified as state roads, as is Erskine Park Road. Ferrers Road to the east of the site is a regional road in the area.

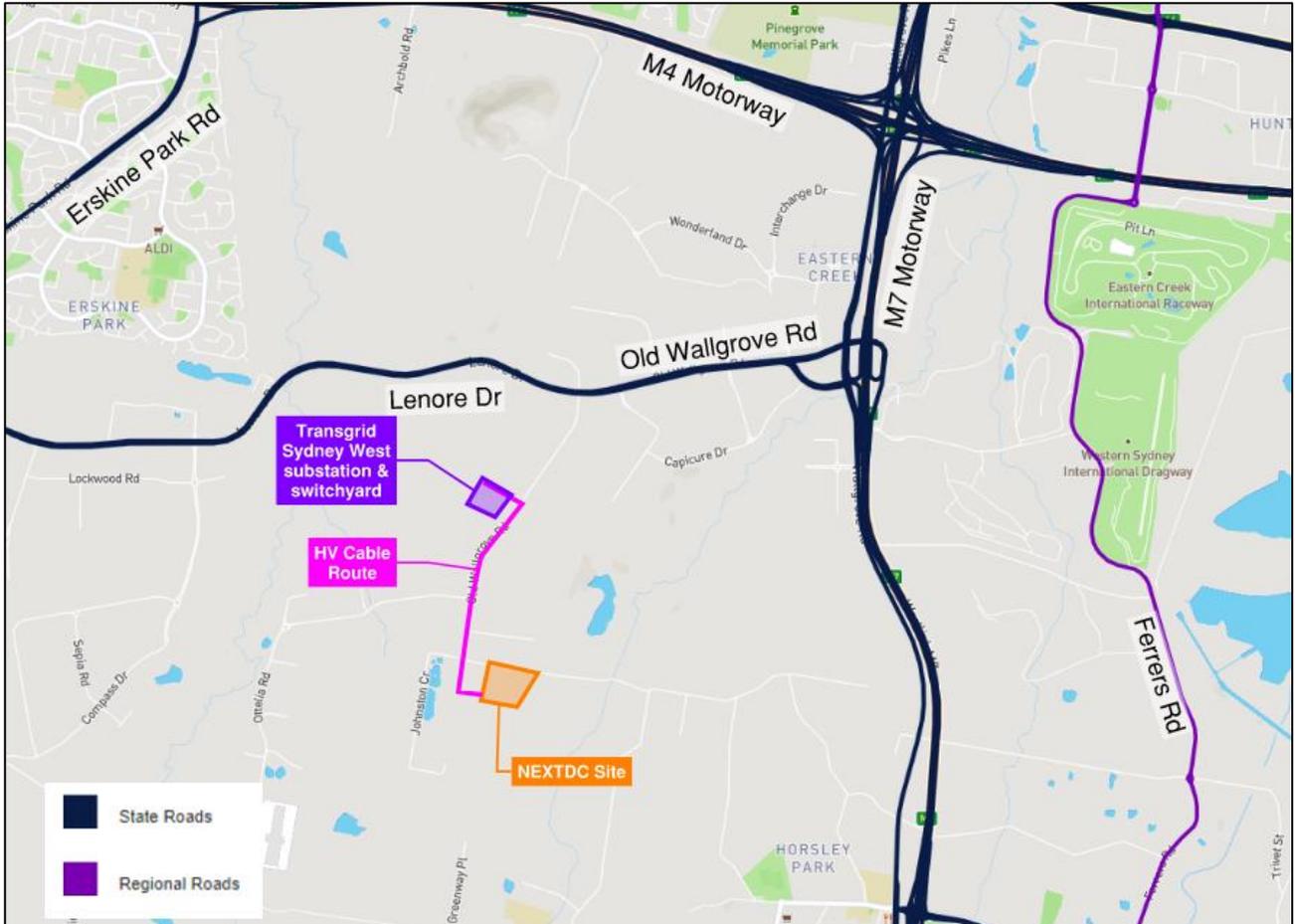


Figure 2: State Road Network

Source: TfNSW Road Network Classifications

M7 Motorway

The M7 motorway is an arterial route providing a primarily north-south alignment, connecting Prestons in the south and Baulkham Hills in the north. The M4 motorway is an arterial route providing a primarily east-west alignment, connecting the City in the Western Sydney suburbs in the west. The M4, M7 and Wallgrove Road intersect at the Lighthorse Interchange to the north-east of the site

Lenore Drive / Old Wallgrove Road (between M7 and Erskine Park Road)

Old Wallgrove Road intersects with Lenore Drive and Telopea Place under traffic signal operation. Old Wallgrove Road / Lenore Drive extends in an east-west alignment connecting the M7 motorway in the east and Erskine Park Road in the west. The road comprising a dual carriageway and providing two to three through lanes of traffic in each direction with additional dedicated turning lanes on approach to major intersections. The carriageways are separated by a central vegetated / concrete median. It is signposted with an 80 km/h speed limit. Old Wallgrove Road / Lenore Drive is an RMS approved 25/26m B-double Route.

2.1.2 Local Road Network

Burley Road

The site is located at 327 Burley Road on the southern side of the roadway. Burley Road is partially unsealed to the east of the development site for approximately 350 metres. The rest of the roadway has two traffic lanes, one in each direction. The road does not contain or kerb and gutter provisions and has sections with line marking and delineation. It is signposted with a 60 km/h speed limit.

Johnston Crescent

Johnston Crescent adjoins Burley Road at the intersection with Old Wallgrove Road. It then extends to the south, placing it to the west of the development site. The road contains one lane in each travel direction.

Old Wallgrove Road

Old Wallgrove Road intersects with Burley Road and Johnston Crescent to the north-west of the site. At this point, the road contains two traffic lanes, one in each direction. The road widens to the north of the site at its intersection with Millner Avenue to become a four lane roadway, with two lanes in each direction and a speed limit of 80 km/h. Further north, Old Wallgrove Road intersects with Lenore Drive and extends towards the M7 motorway. On approach to the motorway, the road widens to three lanes in each direction.

2.1.3 Planned Road Network

Southern Link Road

The site is located at 16 Johnston Crescent, on the southern side of the planned future Southern Link Road (SLR) roadway. The future SLR is being planned as an east-west arterial route, as part of the WSEA Strategic Transport Assessment. It is considered that the SLR would run parallel to the Erskine Park Link Road and would ultimately run adjacent to the northern boundary of the subject site. The road is to form a dual carriageway comprising 2 of 4 lanes of traffic divided by a central median. It is assumed that in the vicinity of the site the SLR would be signposted with a 60 km/h speed limit.

Northwest Link Road

The Northwest Link Road is a planned future road providing a connection between Old Wallgrove Road in the south-east and the M4 in the north-west. This road will create three future intersections with Old Wallgrove Road, Lenore Drive and the M4 motorway, the details for which are unknown at the time of writing this report. The Northwest Link Road is to provide 2 lanes of traffic in each direction. The Northwest Link Road is assumed to be signposted with a 60 km/h speed limit.

2.2 Public Transport

2.2.1 Buses

There are limited public transport services available to travel to and from the site. There are however bus stops located approximately 2 kilometres north of the site on Lenore Drive / Old Wallgrove Road and would take approximately 24 minutes to walk to. Other bus stops are available on Burley Road and Delaware Road to the east of the site. However, these bus stops are accessible via the unsealed segment of Burley Road, meaning that pedestrians cannot easily access these bus stops. The locations of all nearby bus stops are shown in Figure 3.

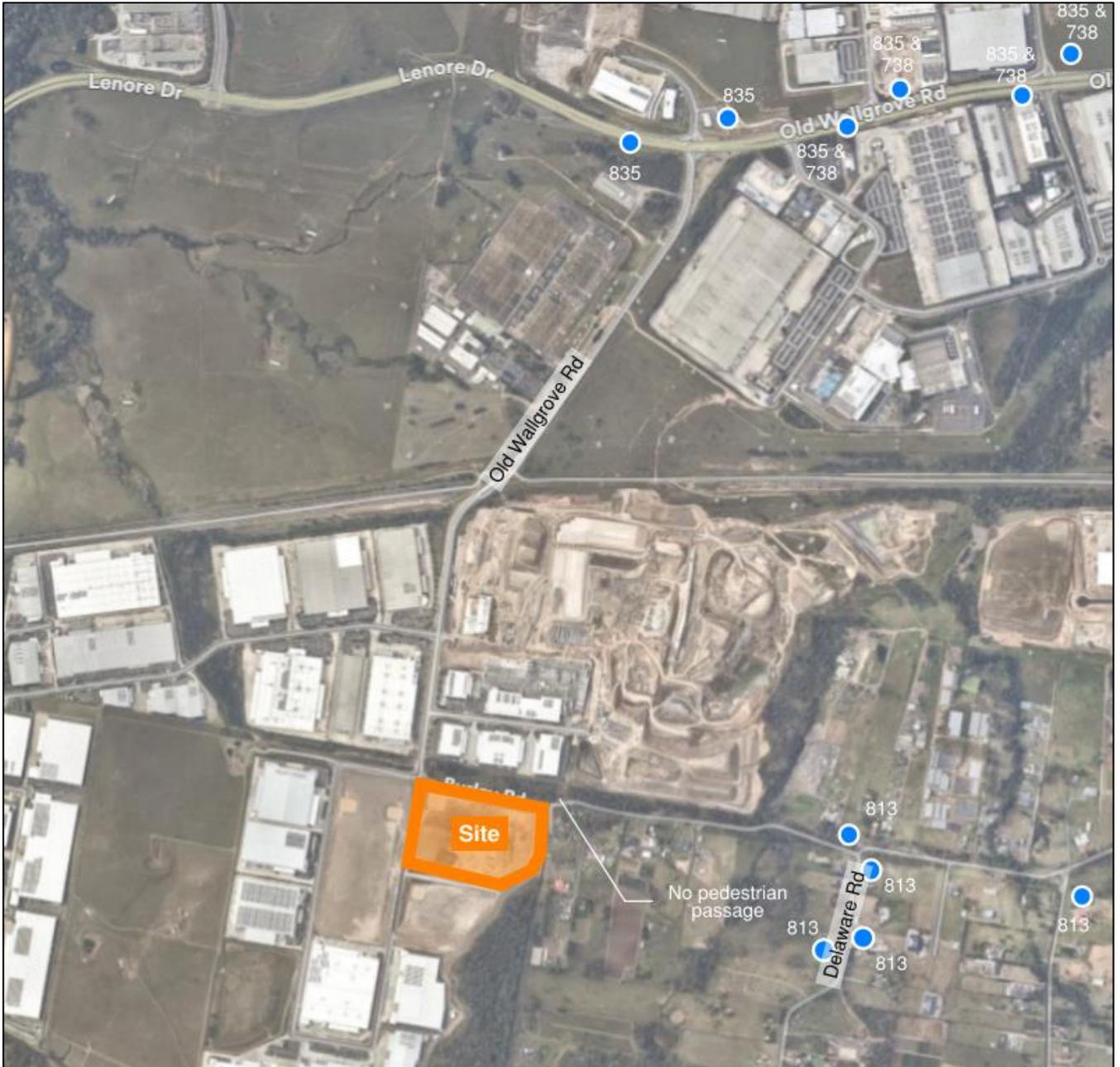


Figure 3: Nearby Bus Stop Facilities

Source: Nearmap

The bus routes available at these bus stops are summarised in Table 4 and the relevant bus network maps are included in Figure 4.

Table 4: Summary of Available Bus Services

Operator	Route Number	Route	Frequency during AM and PM peak hours
Busways Western Sydney	738	Mount Druitt to Eastern Creek via Rooty Hill (Loop Service)	AM: 30 minutes PM: 20 – 40 minutes
Transit Systems	813	Bonnyrigg and Western Sydney Parklands to Fairfield	AM: 105 minutes PM: 1 service offered
		Fairfield to Western Sydney Parklands and Bonnyrigg	AM: 1 service offered PM: 30 minutes
	835	WSU Penrith to Prairiewood	AM: 30 minutes PM: 30 minutes
		Prairiewood to WSU Penrith	AM: 30 minutes PM: 30 minutes

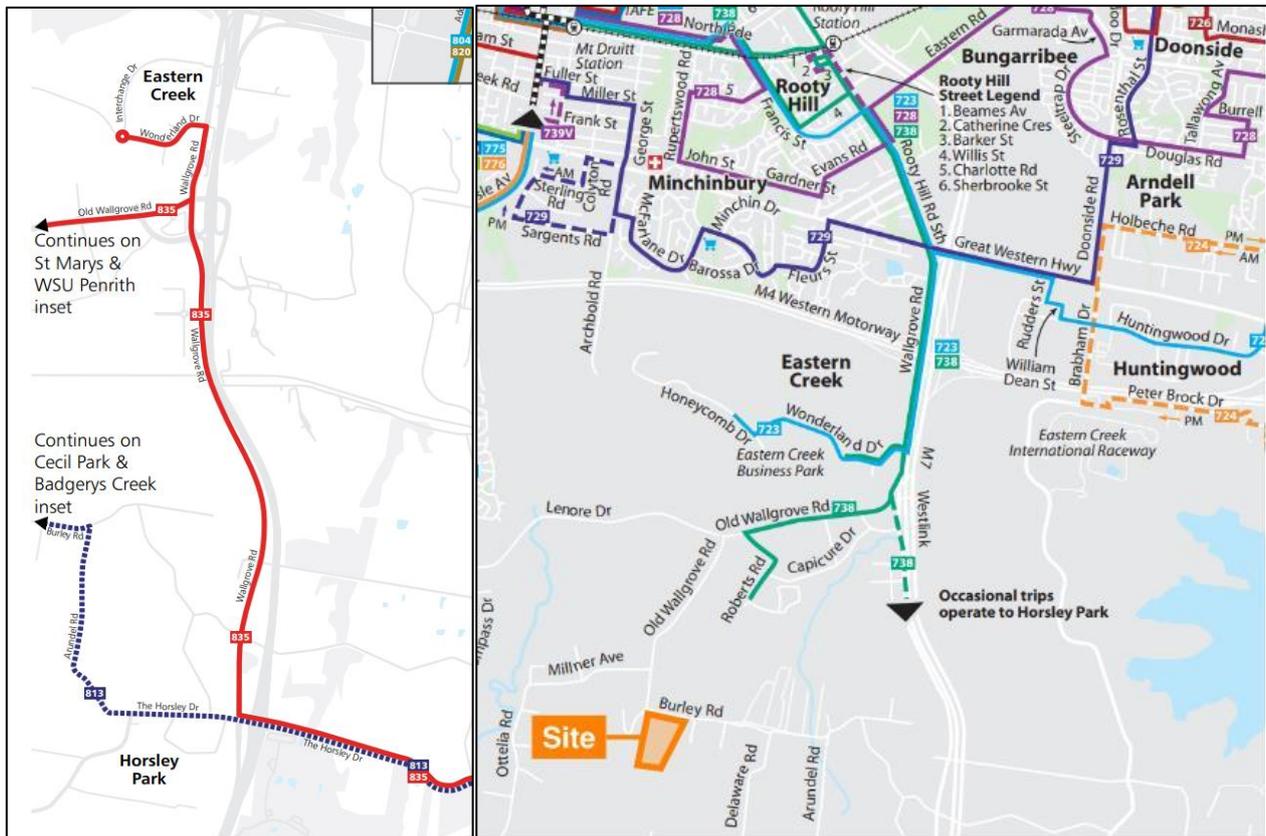


Figure 4: Transit Systems and Busways Bus Network Maps

Source: Transit Systems, 2021

2.3 Active Transport

2.3.1 Pedestrians

There is limited pedestrian infrastructure available in the road network local to the site. There are no pedestrian footpaths or safe road crossing points within 350 metres of the site. 350 metres north of the site is the signalised intersection between Old Wallgrove Road and Millner Avenue, providing a safe crossing opportunity for pedestrians. Old Wallgrove Road to the north of this intersection includes a shared path adjacent to the northbound lane, and footpaths are provided along both sides of Millner Avenue to the west.

The available pedestrian facilities near to the site are shown in Figure 5.



Figure 5: Existing Pedestrian Facilities

2.3.2 Cyclists

The closest designated cycleway to the site is 350 metres north on Old Wallgrove Road, as indicated in Figure 6. From here, the local cycle network provides good connection to the west along Lenore Drive and east along Old Wallgrove Road, with access to the local roads such as Roberts Road and Capicure Drive.

The Westlink M7 Shared Path is approximately 3.5 kilometres from the site, or a 12-minute cycle. The shared path runs alongside the motorway for approximately 40 kilometres between Baulkham Hills and Prestons and is separated from the roadway.

However, cycling infrastructure is still limited around the site, with no cyclist facilities to the south of the site.

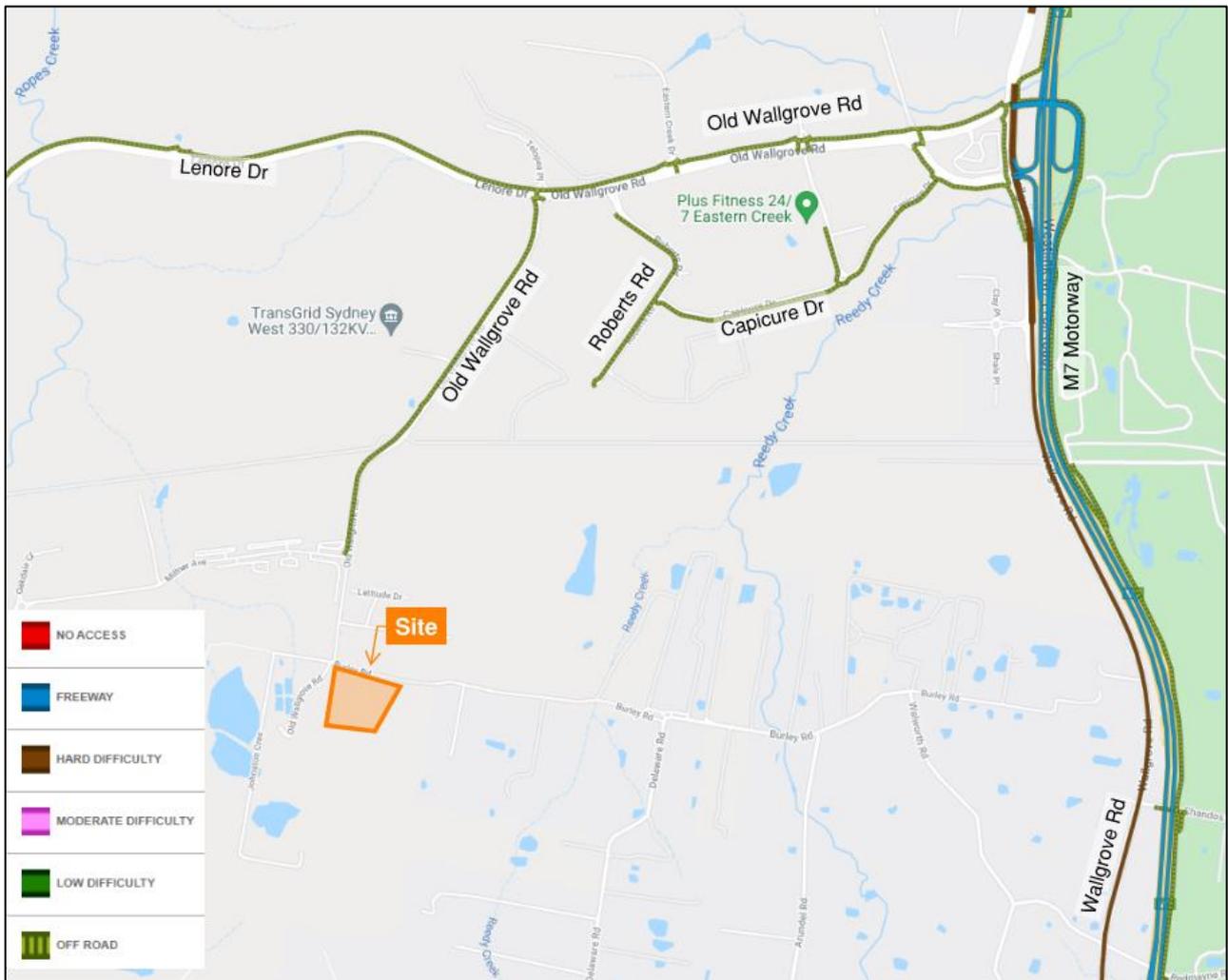


Figure 6: Existing Cyclist Facilities

Source: TfNSW Cycleway Finder

2.4 Traffic Conditions

2.4.1 Traffic Data Collection

The following intersections, shown in Figure 7, have been surveyed in the vicinity of the site during the morning and afternoon peak hours in order to determine the existing traffic volumes within the surrounding road network:

- Telopea Place / Lenore Dr / Old Wallgrove Rd (signalised)
- Old Wallgrove Rd / Millner Ave (signalised)
- Old Wallgrove Rd / Johnston Cres / Burley Rd (unsignalised)



Figure 7: Surveyed Intersections

Source: Nearmap (2024)

Traffic volume surveys were undertaken on Tuesday 5 December 2023 between 7:00 – 9:00am and 4:00 – 6:00pm. The traffic counts included light vehicles, heavy vehicles, cyclists and pedestrians. The date of data collection is considered representative of a typical day, as it fell within normal (non-school holiday) term period. The volumes surveyed below have been used as a baseline dataset from the SSSA. To reflect current conditions, these baseline volumes have been factored and re-modelled to a 2026 condition (Section 5.1.1), representing current traffic patterns (2026).

2.4.2 Traffic Volumes

The traffic volume surveys determined the following morning and afternoon network peak hours:

- AM Peak hour: 7:00am – 8:00am
- PM Peak hour: 4:15pm – 5:15pm

The peak hour traffic volumes collected at the surveyed intersections are summarised in Figure 8 and Figure 9, for the morning and afternoon survey periods, respectively.

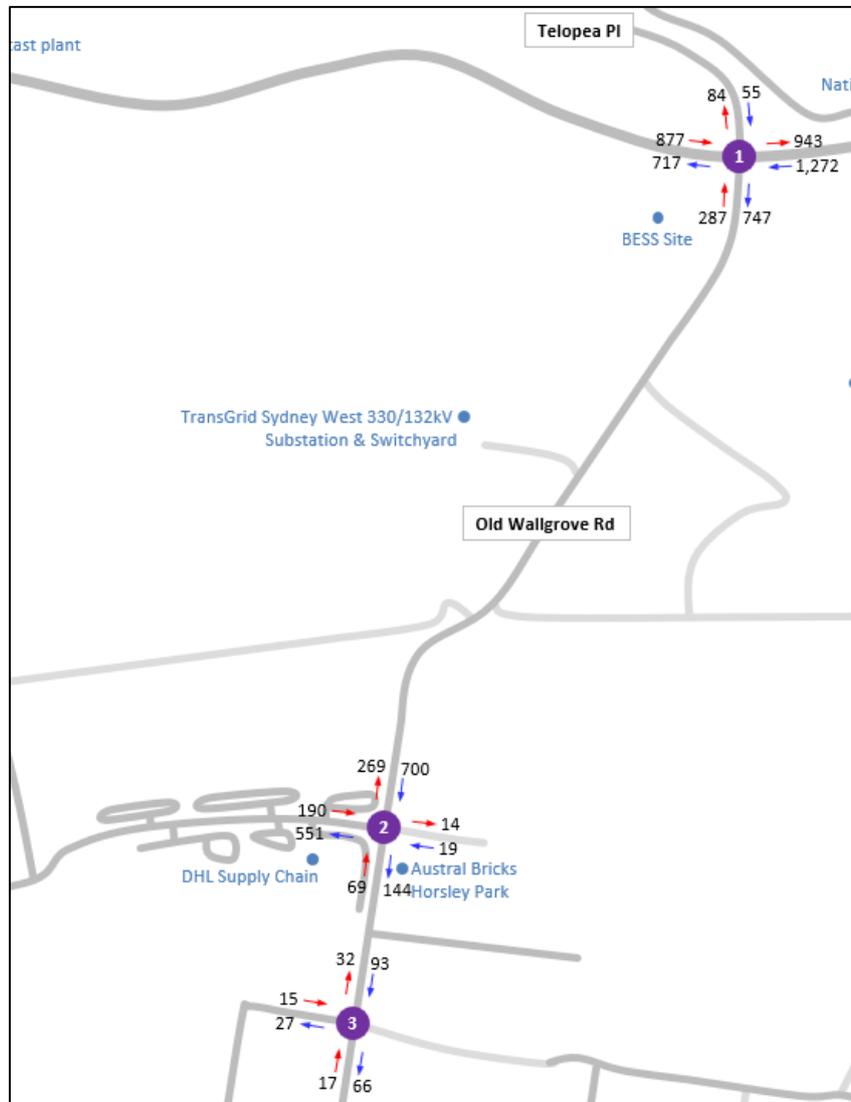


Figure 8: AM Peak Hour Traffic Volumes (7:00am – 8:00am)

Source: Matrix (2023)

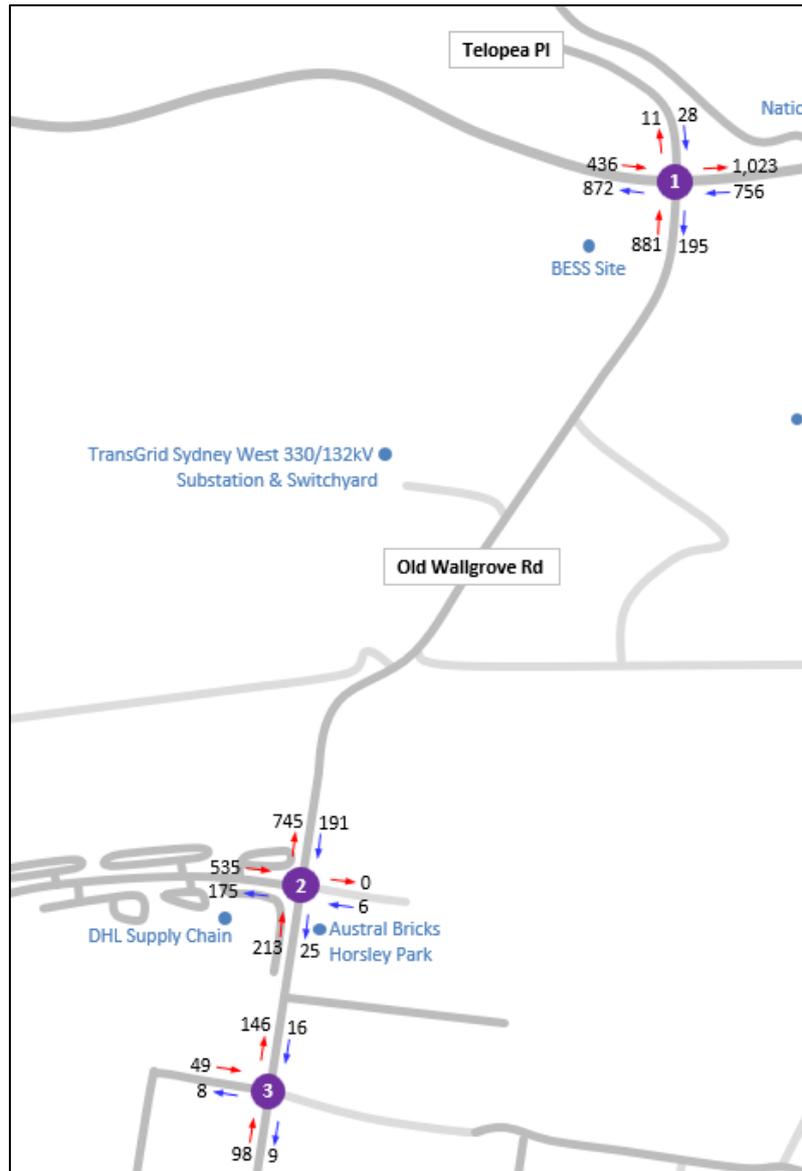


Figure 9: PM Peak Hour Traffic Volumes (4:15pm – 5:15pm)

Source: Matrix (2023)

Survey data indicates that the Johnston Crescent/Burley Road T-intersection carries comparatively lower traffic volumes in both the AM and PM peaks than the other surveyed locations

2.5 Existing Traffic Model

SIDRA intersection modelling has been undertaken to assess the existing traffic conditions and performance of the nearby surveyed intersections. Figure 10, Figure 11 and Figure 12 contains the layout of the three intersections, as modelled in SIDRA.

The upgrades to the signalised intersections layout from the 2023 model are captured in the 2026 modelling scenario, detailed in Section 5.1.2.

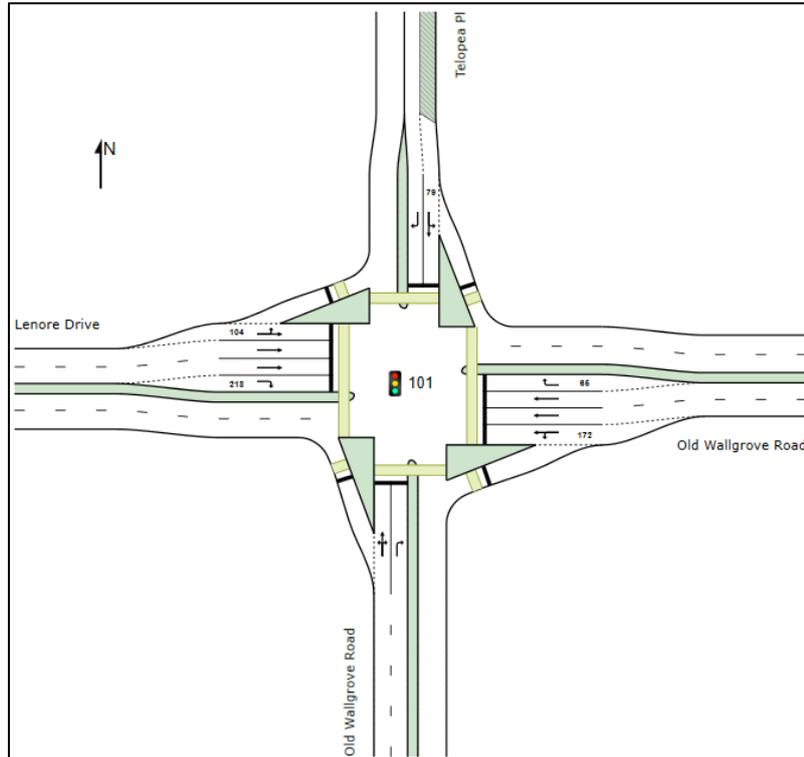


Figure 10: SIDRA Existing Intersection Layout – Old Wallgrove Rd / Lenore Dr / Telopea PI

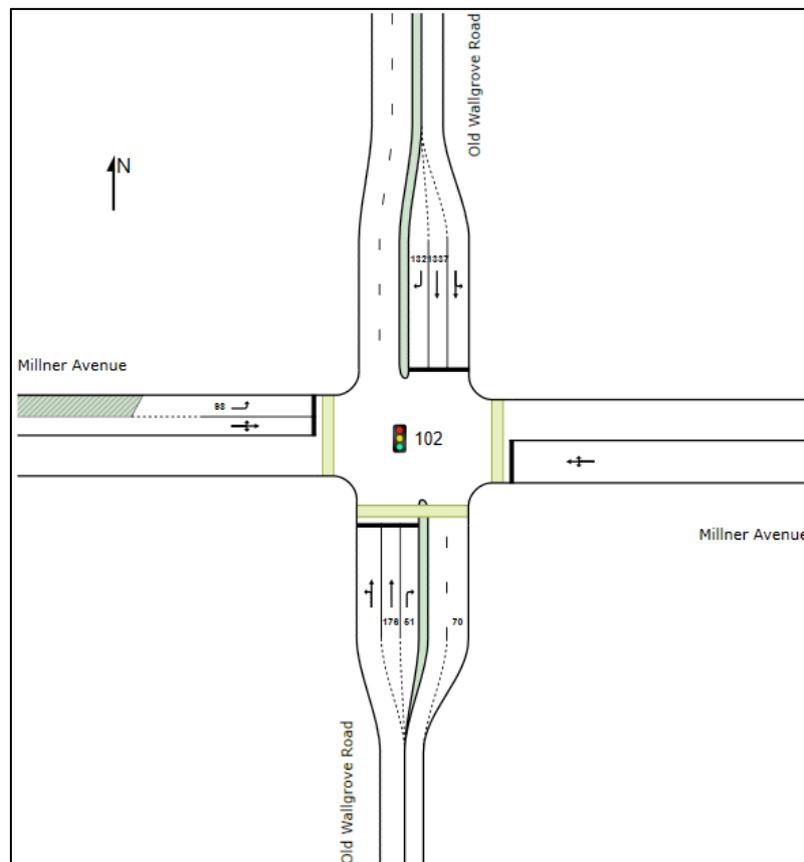


Figure 11: SIDRA Existing Intersection Layout – Millner Ave / Old Wallgrove Rd

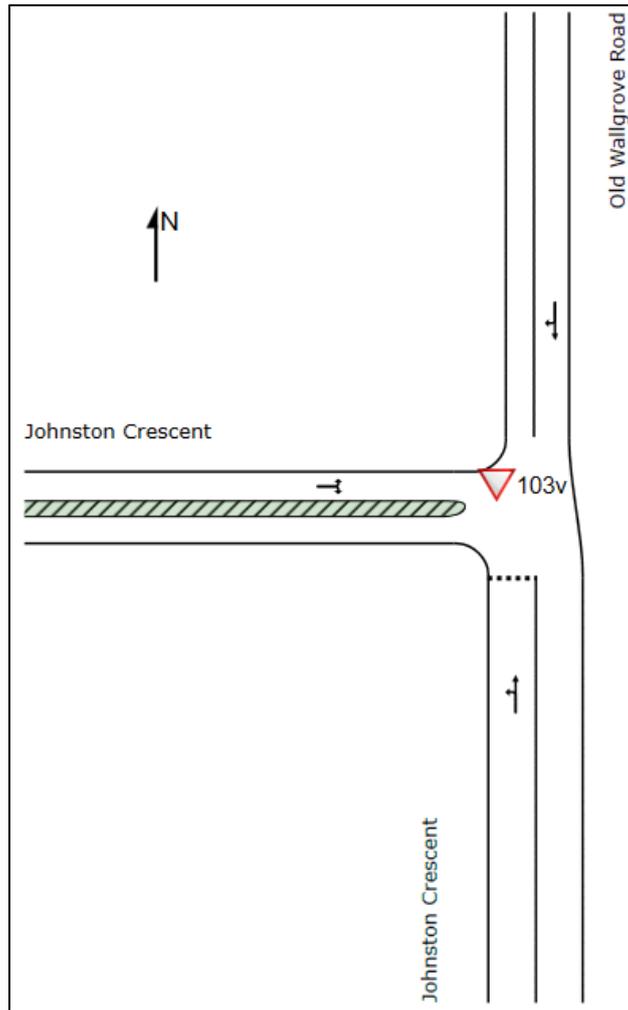


Figure 12: SIDRA Existing Intersection Layout – Old Wallgrove Rd / Johnston Cres

2.5.1 Pedestrian Volumes

Pedestrian volumes were also captured during the above surveys and determined that the pedestrian movements in this area are minimal. During the morning and afternoon peak hours, the pedestrian volume across a single approach of any of the surveyed intersections never exceeded five pedestrians over the whole hour.

As the default volumes in SIDRA are 50 pedestrians per hour for each intersection approach, the actual pedestrian volumes have been input into the model as the default volume would significantly exceed the actual volume.

2.5.2 Performance Criteria

SIDRA modelling outputs provide a range of performance measures, in particular the following parameters are given:

- Degree of saturation (DOS) – The DOS is used to measure the performance of intersections, where a value of 1.0 represents an intersection at theoretical capacity. As the performance of an intersection approaches DOS of 1.0, queue lengths and delays increase rapidly. It is usual to attempt to keep DOS to less than 0.9, with satisfactory intersection operation generally achieved with a DOS below 0.8.

- Average Vehicle Delay (AVD) – The AVD (or average delay per vehicle in seconds) for intersections also provides a measure of the operational performance of an intersection and is used to determine an intersection’s Level of Service (see below). For signalised intersections, the AVD reported relates to the average of all vehicle movements through the intersection. For priority intersections, the AVD reported relates to the worst performing vehicle movement at the intersection.
- 95th Percentile Queue Length – the queue length at an approach to an intersection whereby the value for which 95% of all observed queue lengths fall
- Level of Service (LOS) – This is a comparative measure that provides an indication of the operating performance, based on AVD.
- Table 5 below further describes what each level of service represents.

Table 5: Intersection Performance Criteria

LOS	AVD (Seconds)	Traffic Signals	Give Way and Roundabouts
A	Less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity and accident study required
E	57 to 70	At capacity; at signals, incidents will cause delays	At capacity, requires other control mode
F	More than 70	Unsatisfactory and requires additional capacity	Unsatisfactory and requires other control mode

2.5.3 Existing Intersection Performance

Table 6 summarises the existing operation and performance of the surveyed intersections.

Table 6: Existing Intersection Performance

Note: Data for unsignalised intersections is taken from the movement with the worst delay

Data for signalised intersections is the intersection total

Peak	DOS	AVD	95% Queue Length (veh)	LOS
Teloepa Place / Lenore Dr / Old Wallgrove Rd (signalised)				
AM	0.665	26.1	13.7	B
PM	0.872	31.4	23.3	C
Old Wallgrove Rd / Millner Ave (signalised)				
AM	0.590	15.2	10.2	A
PM	0.374	14.7	5.8	A
Old Wallgrove Rd / Johnston Cres / Burley Rd (unsignalised)				
AM	0.012	6.2	0.0	A
PM	0.087	6.8	0.3	A

The results in Table 6 indicate that all surveyed intersections are currently performing at a satisfactory level of service during the morning and afternoon peak periods.

2.6 Model Calibration

Reference is made to SIDRA User Guide Section 2.6.2 – 2.6.4 which states the tools, measurements and procedures that should be followed in order to accurately calibrate the existing SIDRA model. The User Guide States that the SIDRA model performance should be compared to field observation.

2.6.1 Signal Phasing & Timing

To accurately model the signalised intersections within the network, the phasing and timing information has been input for the existing conditions models based on the following data sources:

- Intersection movement count video footage
 - Footage has been reviewed from the traffic data collection undertaken on 5th of December 2023.
 - The 30-minute AM and PM peak periods have been analysed to understand which phases ran during the modelling period, and which phases were skipped.
- Sydney Coordinated Adaptive Traffic System (SCATS) data
 - Data has been collected for the same day as the intersection movement counts for consistency (5th of December 2023).
 - SCATS data is presented in 15-minute blocks and describes the frequency and timing of each phase called within that period.

Based on analysis of the above data sources, *User-Given Phase Times* and *Phase Frequencies* have been input to the SIDRA model to calibrate the model to the on-site conditions.

For future conditions models, the *Practical Cycle Time* timing option is selected, based on previous advice provided directly by SIDRA Technical Support.

2.6.2 Queue Length Calibration

The SIDRA model has been further calibrated by reviewing the modelled queue lengths against on-site queue length observations. Site observations of the morning and afternoon peak periods were undertaken on the same day as the intersection movement counts for consistency (31st August 2023). The maximum queues were recorded at each intersection, which represent the 95th percentile output queues in SIDRA.

Table 5 indicates the queue length field survey results, in metres, observed at each approach of the signalised intersections of Old Wallgrove Road, Lenore Drive and Telopea Place and Old Wallgrove Road and Millner Avenue during each peak hour and the resultant 95th percentile queue from the existing model, thereby providing an indication of the relevancy of the model.

No queuing was observed at the unsignalised intersection of Johnston Crescent, Burley Road and Old Wallgrove Road. Accordingly, the 95th percentiles queues resulted from the SIDRA analysis existing model were less than one vehicle in length.

Table 7: Maximum Observed Queue and 95th Percentile SIDRA Queue Lengths

	AM Peak (7:00am – 8:00am)			PM Peak (4:15pm – 5:15pm)		
	Field Survey (veh)	SIDRA 95 th Percentile Queue (veh)	Difference	Field Survey (veh)	SIDRA 95 th Percentile Queue (veh)	Difference
Telopea Place / Lenore Dr / Old Wallgrove Rd (signalised)						
Old Wallgrove Rd (South)	6	8.5	+2.5	17	23.3	+3.3
Old Wallgrove Rd (East)	10	13.7	+3.7	11	9.9	-1.1
Telopea Pl (North)	1	2.7	+1.7	4	4.9	+0.9
Lenore Dr (West)	12	10.9	-1.1	5	5.6	+0.6
Old Wallgrove Rd / Millner Ave (signalised)						
Old Wallgrove Rd (North)	14	10.2	-3.8	6	5.8	-0.2
Old Wallgrove Rd (South)	1	0.8	-0.2	2	2	0
Millner Ave (West)	3	1.7	-1.3	7	5.3	-1.2
Access Rd (East)	1	0.6	-0.4	2	0.2	-1.8

As shown in Table 7 review of the SIDRA outputs indicates that the model accurately reflects the observed onsite queues for the same day and peak period.

3.0 Construction Overview

3.1 Detailed Project Description

3.1.1 Overall Works

The key features of the proposed works are summarised as follows:

- Site preparation works including bulk earthworks including tree removal.
- Staged construction and operation of two data centre buildings comprising a total gross floor area (GFA) of 61,695m² including 56,464m² of technical data hall floor space and 5,231m² of ancillary office floor space, including 'front of house' meeting and administrative spaces.
- Ancillary development including a centralised security office building at the main vehicle entrance, on-site parking for 200 cars, business identification signage (pylon and elevation signage), civil and stormwater works and 12,769m² of deep soil landscaping.
- Provision of a high-voltage (HV) power connection delivering 294 megawatts of power, including a 330kV substation and a 33kV switching station, plus above ground diesel storage tanks and above ground water tanks for industrial water and fire water. This is further discussed in Section 3.1.3.
- The project will be delivered in four construction stages as follows:
 - Stage 1 = Building C, HV switching building, 330kV substation, HV external cabling route, entrance to site, centralised security office, and water tanks.
 - Stage 2 = Building D
 - Stage 3 = Building A
 - Stage 4 = Building B

The key components of the proposed data centre development are listed in Table 8. Figure 7 (attached in Appendix B) shows the proposed general arrangement for the data centre development, including the site layout.

Table 8: Project Details

Element	Amended Proposal
Land Use Activity	Data centre with 24 data halls, ancillary office floor space
Development Area	8.206 ha (site) plus land within HV route (11,617 m ²)
Site Area	8.206 ha
Total GFA	61,695m ²
Data Hall GFA	56,464m ²
Ancillary Office / Admin GFA	5,231m ²
Floor Space Ratio	0.75:1
Car Parking	200 spaces
Bicycle Parking	8 spaces
Motorbike Parking	5 spaces
Maximum Building Height	Building AB – 38.67 metres over four storeys Building CD – 38.67 metres over four storeys
Deep Soil	12,769m ² (15.6% of site area)
Tree Removal	0 trees required to be removed for main data centre site. Six trees to be removed on Old Wallgrove Road at interface with TransGrid substation for the HV external cabling route.
Cut and Fill Volume	Net cut 26,000m ³ (approximately)
Power Consumption	<ul style="list-style-type: none"> ▪ 294 megawatts
Operating Hours	<ul style="list-style-type: none"> ▪ 24-hours, 7 days a week
Jobs - full-time equivalent (FTE) employees	Construction: 1,800 Operation: 411
Generators	120

Element	Amended Proposal
<p>Utilities and services</p>	<p><u>Diesel Tanks:</u></p> <p>Building AB: 16 x 136kL</p> <p>Building CD: 16 x 136kL</p> <p><u>Industrial Water Tanks:</u></p> <p>Building A+B: 3 x 2124kL</p> <p>Building C+D: 3 x 2124kL</p> <p><u>Fire Water Tanks:</u></p> <p>2 x 400kL</p> <p><u>Substation:</u></p> <p>330kV substation plus a 33kV switching station on site</p>

3.1.2 Construction Site Plan

A site plan has been provided by Multiplex to indicate the overall construction works within the site and the key elements of the construction methodology including works zone, traffic control location, truck turning area and marshalling areas as well as fencing/hoarding locations. This site plan is provided as Figure 13.

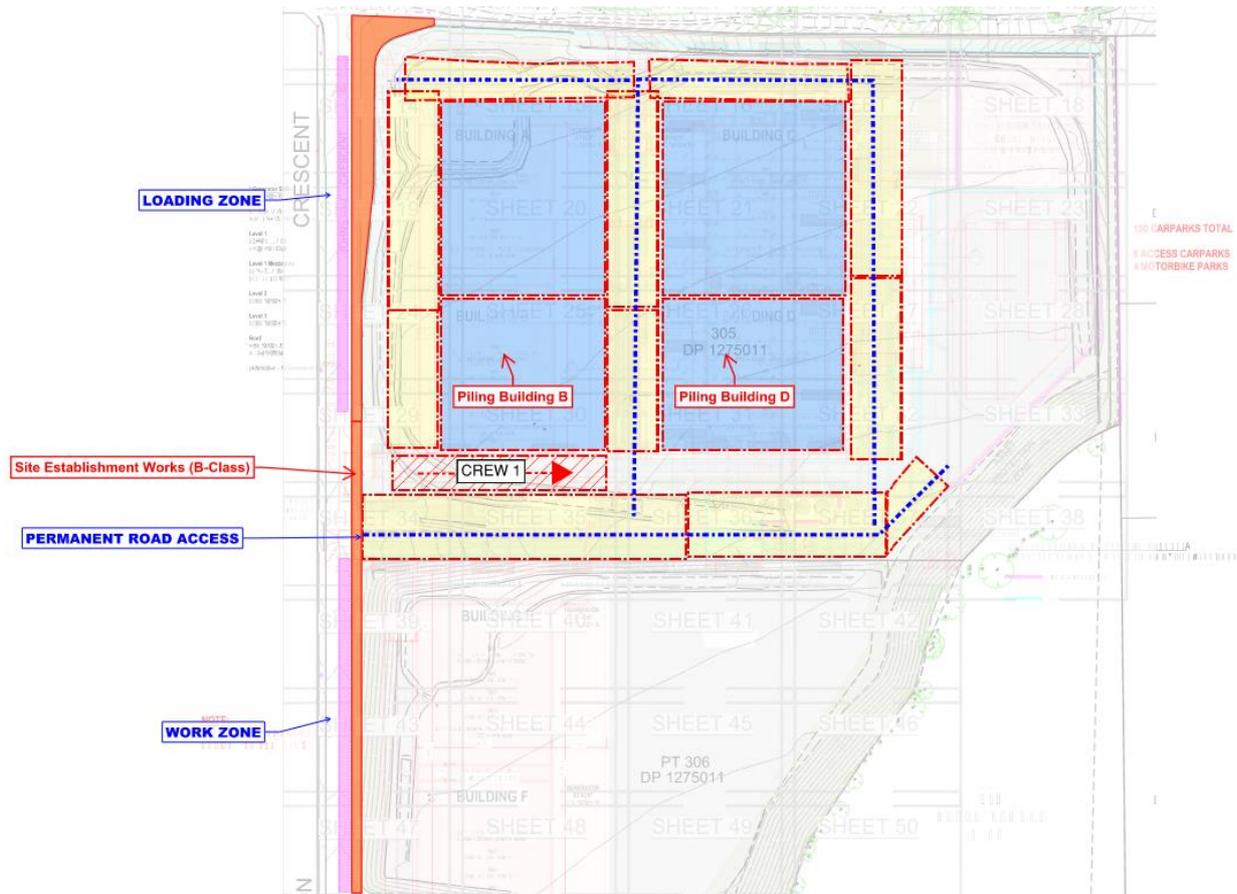


Figure 13: Overall Site Plan

Source: Multiplex (MPX)

3.1.3 HV External Cable and Sydney West Expansion

The HV works include installing two underground high-voltage cable circuits to connect the NEXTDC S4 site to TransGrid’s Sydney West Substation on Old Wallgrove Road. The alignment is approximately 2.6 km long and runs predominantly within existing road reserves along Johnston Crescent and Old Wallgrove Road, traversing both the Fairfield City Council and Blacktown City Council local government areas.

Key components of the project include:

- Cable works connecting TransGrid Sydney West Substation with the NEXTDC S4 onsite substation comprising:
 - Two x 330 kV underground transmission cable circuit comprising three cables installed in three conduits;
 - Two smaller conduits for carrying optical fibres;
 - Approx. 2-4 joint bays, per circuit, where sections of cable would be joined together, located approximately every 600-800 metres along the transmission cable route;
 - link boxes and sensor boxes associated with each joint bay to allow cable testing and maintenance;
- Upgrade works at the TransGrid Sydney West substation to facilitate the new 330 kV transmission cable

circuit including:

- The extension of the existing substation bench to enable the construction of two new 330KV feeder bays including:
 - Relocation of internal access road.
 - Relocation of the fence line.
 - Installation of lightning rods (20m in height)
 - Extension to 330KV Busbar-B Section-2 at Sydney West Substation.
 - The construction of two new 330kV switch bays and associated primary and secondary equipment.
 - The construction of a new secondary systems building.
 - All required secondary systems work.
 - Underground electrical and telecommunications cabling will be installed throughout the broader Sydney West 330kV switchyard as part of the connection of the new switch bay equipment.
- Four temporary construction laydown areas to facilitate construction of the project.

Associated works required to facilitate the construction of the project, such as potential utility relocations, have been considered. No major utility relocations are anticipated and where smaller services may need to be moved to accommodate the transmission cable circuit, this relocation would be restricted to within the project area.

A summary of the external HV works is provided in Table 9.

Table 9: Project Summary – External HV Works

Project element	Summary of proposal
Excavation method	Trenching – Within the Sydney West substation - up to 2 metres wide and up to 4 metres deep Trenching – outside of the substation along road corridor – two separate trenches 1 metre wide and up to 2 metres deep and 2 metres apart
Cable life	Minimum of 40 years
Cable length	2.6 km
Key components	330 kV cables, conduits, joint bays, substation upgrades and temporary construction laydown areas.
Timing and duration	Around a 14-month construction period, proposed to commence in 2026 (subject to project approval). Operations to commence in 2028.

Project element	Summary of proposal
Workforce	Peak construction workforce of around 70 personnel (excludes traffic management personnel)
Estimated spoil volume	Approximately 7,500 cubic metres of spoil would be removed during excavation and trenching.
Hours of construction	<p>Standard construction hours would be adopted where reasonable and feasible:</p> <ul style="list-style-type: none"> • Monday to Friday 7:00 am to 6:00 pm. • Saturday 8:00 am to 1:00 pm; and • No works on Sundays and public holidays. <p>Works outside standard construction hours, including night works and 24-hour operations, may be required for activities along Old Wallgrove Road and Johnston Crescent, at cable jointing locations, and in other areas as necessary or as requested by relevant authorities.</p>
Capital investment for HV component (included in overall amended EDC)	<ol style="list-style-type: none"> 1. Sydney Wests Bay extension works \$25M 2. 330kV cable works from Sydney West Site to the substation at NEXTDC S4 site \$44M 3. GIS substation works within NEXTDC S4 site \$86M <p>TOTAL: \$155M</p>

Figure 14 details the works area and the extent of cabling route that will be required to connect the site and the TransGrid Sydney West Substation site.



Figure 14: Project Area Map
Source: TransGrid, 2025

Figure 15 and Figure 16 detail the proposed works within the TransGrid Sydney West Substation site. A typical trench configuration for two cable circuits is provided at Figure 17.



Figure 15: TransGrid Sydney West Substation - Extent of Works
Source: TransGrid, 2025

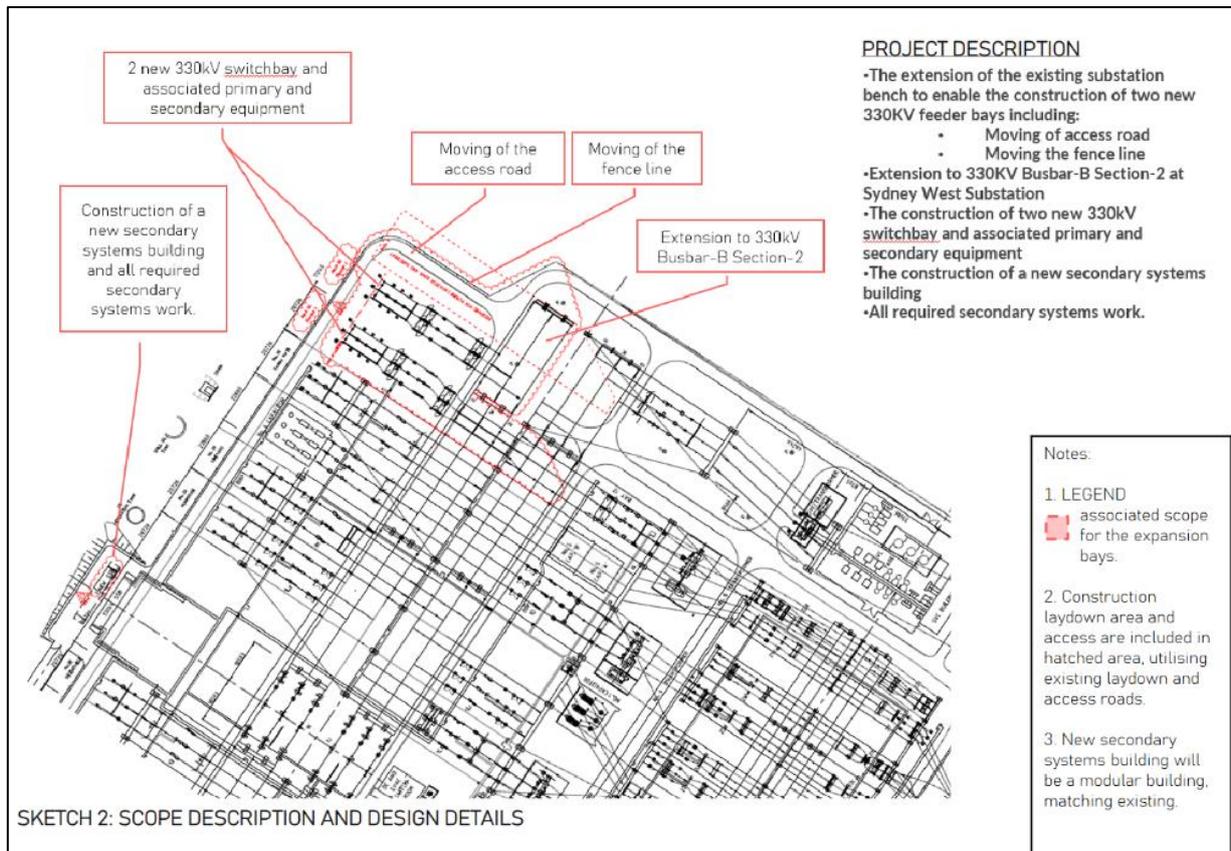


Figure 16: TransGrid Sydney West Substation – Site Plan
Source: TransGrid, 2025

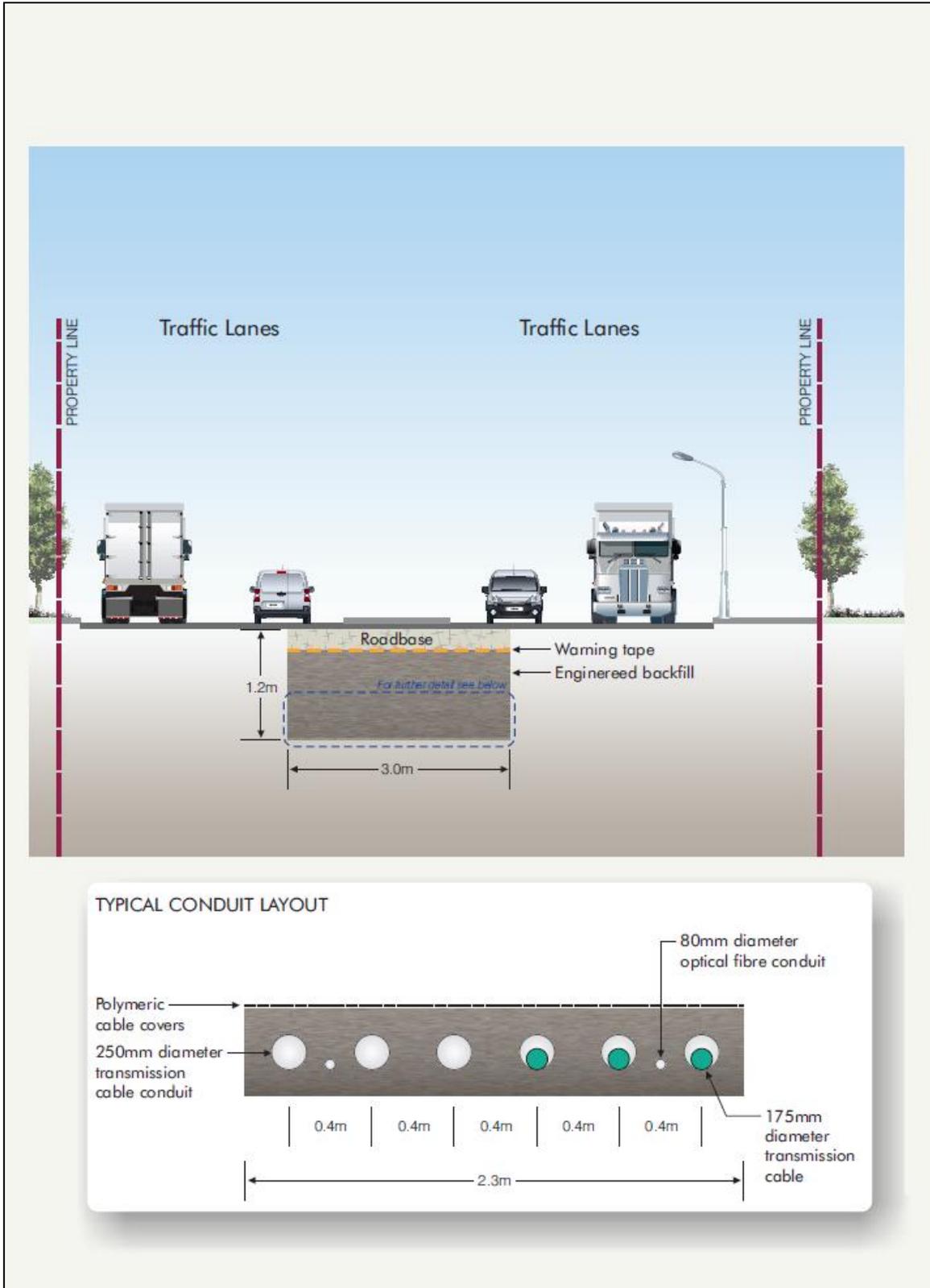


Figure 17: Typical Flat Trench Configuration for Two Cable Circuits
Source: TransGrid (Powering Sydney's Future) 2025

3.2 Estimated Construction Program

3.2.1 Overall Works

The proposed site is to be constructed in four stages with construction of the stages overlapping and occurring concurrently. Table 10 presents the indicative construction milestones, with an average on-site workforce of approximately 1,800 and an average of 130–180 truck movements per day during peak construction. These estimates are derived from Multiplex’s Milestone Program.

Table 10: Estimated Construction Program (Overall Works)

Phase	Key Milestone	Schedule (approx.)	Duration (approx.)
Stage 1 Building C & D	Demolition	March 2026 to April 2026	1 month
	Bulk Excavation	March 2026 to June 2026	3 months
	Structure	August 2026 to April 2026	9 months
	Fitout & Finishes	October 2026 to October 2028	2 years
Stage 2 Integrated with Stage 1	Demolition	March 2026 to April 2026	1 month
	Bulk Excavation	March 2026 to June 2026	3 months
	Structure	February 2027 to October 2027	9 months
	Fitout & Finishes	April 2027 to April 2029	2 years
Stage 3 Building A	Demolition	March 2026 to April 2026	1 month
	Bulk Excavation	March 2026 to June 2026	3 months
	Structure	February 2028 to October 2028	9 months
	Fitout & Finishes	June 2026 to February 2027	9 months
Stage 4 Building B	Bulk Excavation	June 2026 to June 2028	2 years
	Structure	March 2026 to June 2026	3 months
	Fitout & Finishes	July 2026 to July 2028	2 years

3.2.2 HV External Cable and Sydney West Expansion

Stage 1 will deliver the on-site substation together with Building C, the main site entrance, Centralised Security Office (CSO), water tank farm and associated car parking. The HV cable and Sydney West Substation expansion will proceed in five stages with a maximum on-site workforce of approximately 40–50 personnel. These estimates are derived from the Lumea–Transgrid Milestone Program, as shown in Table 11.

Table 11: Estimated Construction Program (HV External Cable and Sydney West Expansion)

Phase	Key Milestone	Average Workers On-Site	Duration (approx.)
Stage 1 Site Establishment	Temp Fencing	10 -15	5 Days
	Site Sheds	10 -15	10 Days
	Sediment Controls	10 -15	3 Days
Stage 2 Bulk Earthworks & Drainage	Bench Earthworks	25 -30	66 Days
	Drainage	30 -35	80 Days
Stage 3 Conduits & Foundations	Foundations	40 -50	200 Days
	Conduits	30 -35	60 Days
Stage 4 Electrical Works (Excl. 3rd party TG Contractors)	Electrical Install	40 -50	210 Days
	Testing & Commissioning	20 -25	51 Days
Stage 5 Demobilisation	Temp Fencing	10 -15	5 Days
	Site Sheds	10 -15	10 Days

3.3 Main Construction Activities

The proposed works are anticipated to be undertaken over a timeframe of approximately 3 years, commencing in March 2026 and concluding in April 2029. As previously noted, the construction works will be delivered in four stages, with the following breakdown of key activities:

- **Early works (Site Preparation, demolition, bulk earthworks)**
 - Demolition is undertaken concurrently at the commencement of the project.
 - Bulk excavation follows demolition and is generally carried out in parallel across the site to establish foundation levels.
- **Substructure and structural construction**
 - Structural works are delivered in a staged manner by building, with Buildings C & D constructed first, followed by Stage 2 works, then Buildings A and B.
 - Structure works overlap between stages to optimise program efficiency.
- **Fitout and finishes**
 - Internal fitout and finishes commence progressively once individual buildings reach structural completion.
 - These works extend over the longest period of the program and overlap across multiple stages, reflecting the complexity and scale of the development.
- **Overall program approach**
 - The construction program is characterised by overlapping stages, allowing demolition, excavation, structure, and fitout activities to occur concurrently in different areas of the site.
 - This staged and integrated approach minimises overall construction duration while maintaining a logical build sequence.

A temporary road is to be established at the commencement of construction to allow for construction vehicle access to the site while the permanent road access is being constructed. Once completed, the permanent road access will be used as the vehicular access to the site for the remaining periods of construction.

Internal roads and parking are to be delivered next to each building as required through the above stages. Once the permanent road is completed, Lumea vehicle access will be provided to the substation compound area unobstructed to authorised vehicles. Access will be managed through security-controlled boom-gates/construction fencing around the compound.

In addition to the above main construction activities, the HV cable route construction will consist of 2 x trenches, which will transition along Johnston Crescent and Old Wallgrove Road. Construction activities will also take place concurrently at Sydney west for expansion works.

3.4 Hours of operation

The on-site works will be undertaken in accordance with those specified in Condition B1, which are as follows:

- Monday to Friday 7am to 6pm
- Saturdays 8am to 1pm
- Sundays and Public Holidays None

Night works will occur subject to approval.

4.0 Management of Construction Vehicles

4.1 Construction Truck Routes

The construction site access will occur from a construction driveway connecting with Johnston Crescent in the south-western corner of the site. Following this, access to the site will be via the following routes (refer to Figure 18):

From/To the north:

- Inbound – from southbound Westlink M7, exit to Old Wallgrove Road, turn left to Old Wallgrove Road at the intersection of Lenore Drive / Telopea Place / Old Wallgrove Road, through to Johnston Crescent and left turn into the site
- Outbound – right turn out of the site to Johnston Crescent, through to Old Wallgrove Road, right turn to Old Wallgrove Road at the intersection of Lenore Drive / Telopea Place / Old Wallgrove Road, right turn to Mini Link Road and left turn onto Northbound Westlink M7

From/To the south:

- Inbound – from northbound Westlink M7, exit to Mini Link Road, turn left to Old Wallgrove Road, turn left to Old Wallgrove Road at the intersection of Lenore Drive / Telopea Place / Old Wallgrove Road, through to Johnston Crescent and left turn into the site
- Outbound – right turn out of the site to Johnston Crescent, through to Old Wallgrove Road, right turn to Old Wallgrove Road at the intersection of Lenore Drive / Telopea Place / Old Wallgrove Road, through to Westlink M7 Onramp to access southbound lanes

From/To the east:

- Inbound – from westbound Western Motorway (M4), exit to Wallgrove Road, right turn to Old Wallgrove Road, turn left to Old Wallgrove Road at the intersection of Lenore Drive / Telopea Place / Old Wallgrove Road, through to Johnston Crescent and turn left into the site
- Outbound – right turn out of the site to Johnston Crescent, through to Old Wallgrove Road, right turn to Old Wallgrove Road at the intersection of Lenore Drive / Telopea Place / Old Wallgrove Road, left turn to Wallgrove Road, right turn to eastbound Western Motorway (M4)

From/To the west:

- Inbound – from eastbound Western Motorway (M4), exit to Wallgrove Road, right turn to Old Wallgrove Road, turn left to Old Wallgrove Road at the intersection of Lenore Drive / Telopea Place / Old Wallgrove Road, through to Johnston Crescent and turn left into the site
- Outbound – right turn out of the site to Johnston Crescent, through to Old Wallgrove Road, right turn to Old Wallgrove Road at the intersection of Lenore Drive / Telopea Place / Old Wallgrove Road, left turn to Wallgrove Road, left to westbound Western Motorway (M4)

The above construction vehicle routes have been chosen to avoid local roads and school zones, where possible.

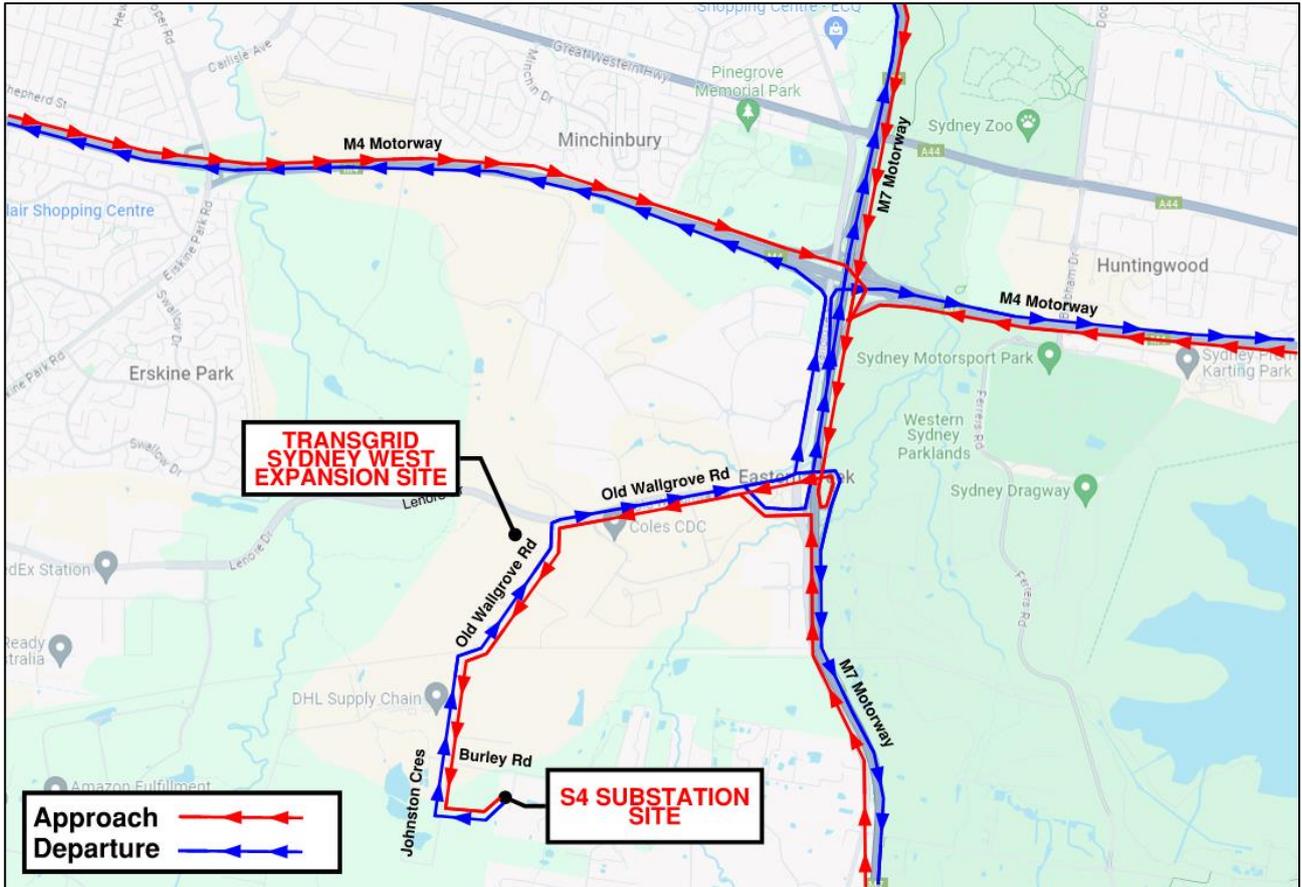


Figure 18: Construction Vehicle Access Routes

4.2 Construction Vehicle Types

Proposed truck types to be used during the construction works are expected to be vehicles up to and including 20m long Articulated Vehicles, mobile cranes, wide loaders and truck and dog type vehicles.

Additionally, the following vehicles are anticipated for the HV cable and Sydney West Expansion works, but are not limited to:

- Heavy Rigid Vehicles (HRV)
- Cranes, excavators, concrete trucks, bulldozers, vehicle loading cranes (VLCs), Tesmecs, Elevated Work Platforms (EWP), Telehandlers
- Mobile (60T Slew or Franna)
- Truck and Dog
- Oversized vehicles (including a limited number of high-risk oversized vehicles – for largest vehicle type more information provided below)
- Water tankers
- Passenger vehicles

The substation works will require the delivery of oversize vehicles (including transformer transport), which will be subject to separate approval and management plans. Notwithstanding this, the construction access has been designed to accommodate vehicle entry and exit in a forward direction.

The configurations of the typical construction vehicles anticipated, being a standard design HRV and 20 m AV are illustrated in Figure 19, Figure 20.

The largest vehicle anticipated to access the site is the oversized transformer delivery vehicle that will enter the site and access the Lumea substation compound. The detail of this vehicle is provided in Figure 21.

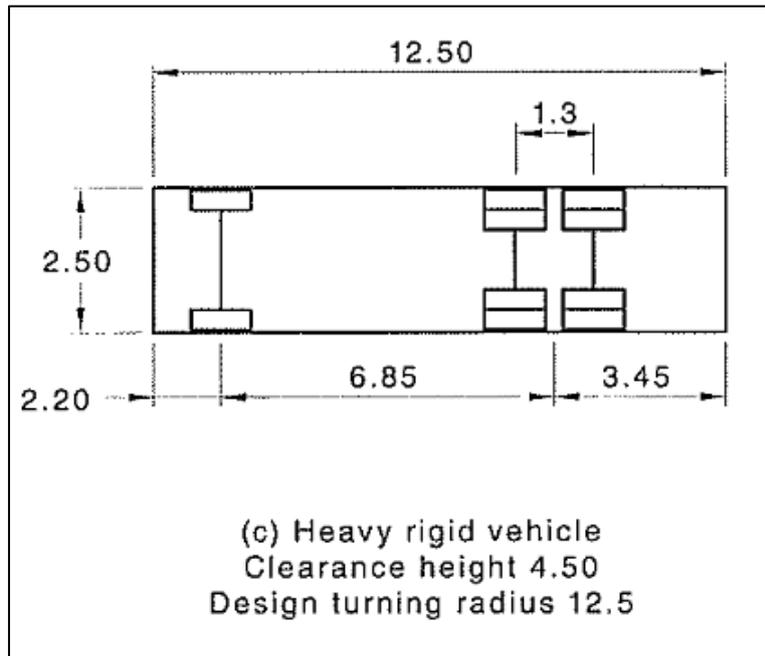


Figure 19: HRV Configuration

Source: *Parking facilities, Part 2: Off-street commercial vehicle facilities AS2890.2*

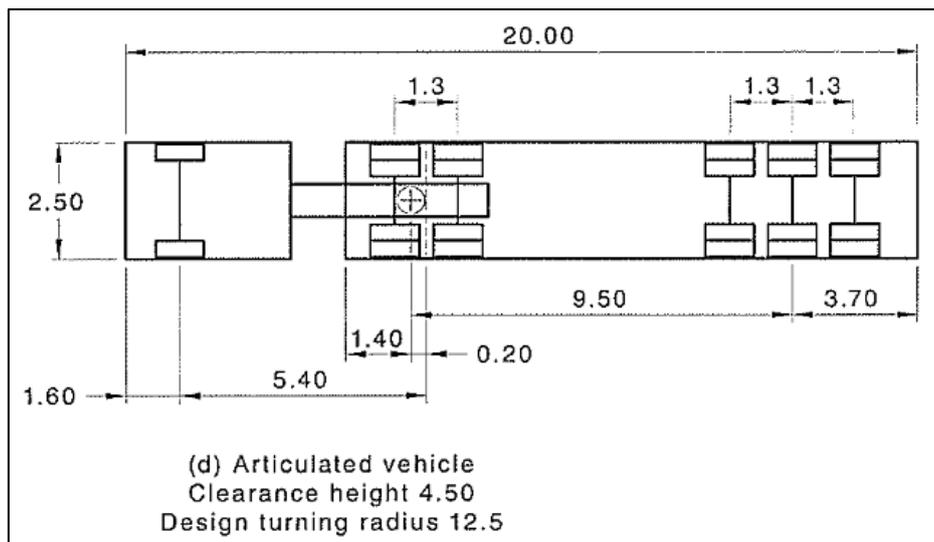


Figure 20: AV Configuration

Source: *Parking facilities, Part 2: Off-street commercial vehicle facilities AS2890.2*

4.3 Construction Site Access

Vehicles will enter the site from the construction driveway connecting with Johnston Crescent (permanent access) in the south-western corner of the site. Access is approximately 10 m wide, which is sufficient to accommodate two-way vehicle movements and controlled heavy-vehicle entry/exit.

An alternative access (Road 9), including a dedicated turnaround area, will be used while the permanent road is under construction, as shown in Figure 22. A separate passenger vehicle access will be provided at Lot 306 for construction vehicle parking.

Given the HV cabling works and Sydney West Expansion will occur simultaneously with the NEXTDC S4 Stage 1 construction, it is important that any construction schedule, construction vehicle access, and construction traffic between the substation and NEXTDC S4 be coordinated, communicated and managed to avoid overlaps/conflicts with the site. All vehicles are to enter and exit the site in a forward direction at all times.

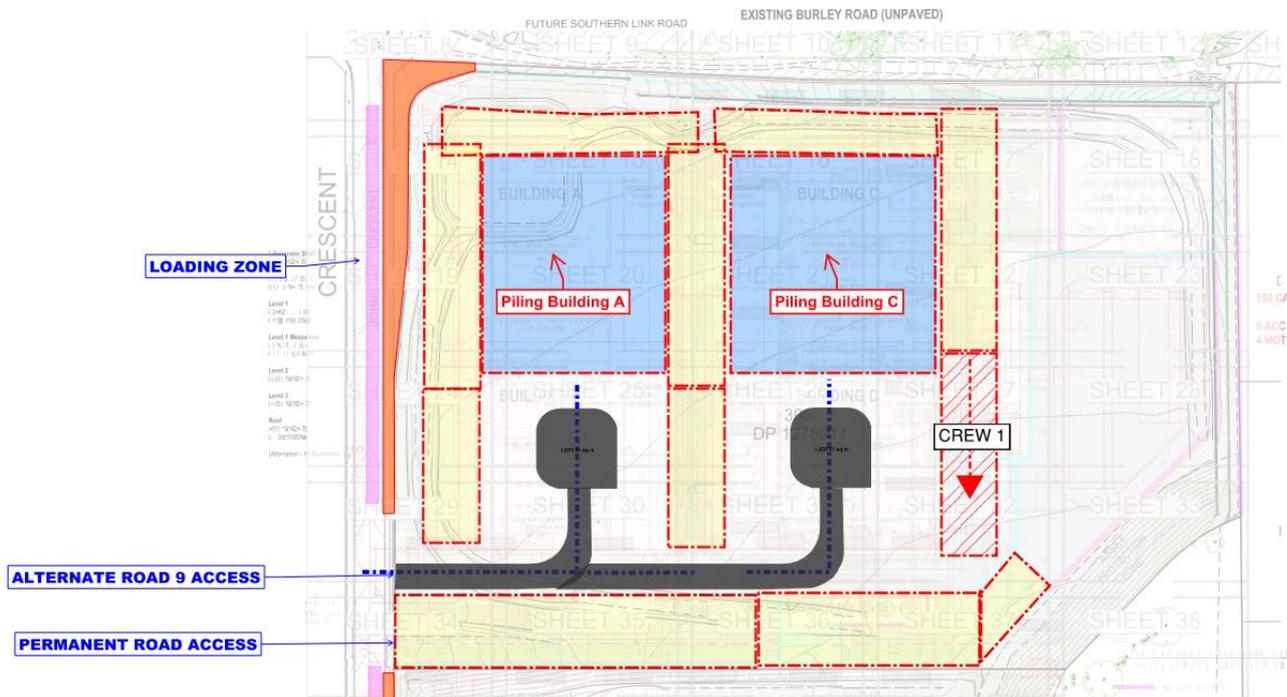


Figure 22: Construction Site Access

Source: Multiplex (MPX)

4.4 Vehicle Management

4.4.1 Heavy Vehicles

Construction vehicle traffic volumes at peak months for the NEXTDC S4 works are likely to reach 180 vehicles per day for the main works (within 11 construction hours, up to 16 vehicles per hour). For the HV cable works, volumes are approximately 7 vehicles per day and will be scheduled outside of the network peaks, with a portion of works (trenching) to be undertaken primarily at night to minimise network impacts. These heavy construction vehicle volumes have been modelled to assess the impacts on the external road network, which is detailed in Section 5.1.

Construction vehicle movements will occur throughout the day and may involve concrete trucks, articulated hauliers, or delivery trucks. All deliveries will be made within the approved work hours. Truck movements to and from the site will be scheduled outside of network peak hours where possible, to reduce impacts on the

local road network. Avoiding network peak hours aims to prevent both the queuing of construction vehicles on the local roadway and congestion in the neighbouring areas.

During days of high estimated vehicle movements, communication between the site, concrete batching plant and/or vehicles will be maintained to stagger the arrival of vehicles, for them to be accommodated within the worksite and to minimise traffic disruptions.

Loading and unloading activities will be managed within the site boundaries, with trucks entering and exiting in a forward direction. Careful management of heavy construction vehicles exiting the site will ensure traffic safety at all site access points. The relatively low traffic volumes on Johnston Crescent mean vehicles will be able to use suitable traffic gaps to exit, subject to appropriate management.

All vehicle movement controls and access management measures described above are detailed in the Traffic Guidance Schemes (TGS) appended to this report. The TGS plans illustrate the location of site access points, vehicle entry and exit movements, and pedestrian protection arrangements, ensuring that the management measures outlined in this section are effectively implemented on site.

4.4.2 Light Vehicles

It is also anticipated that construction workers will generate traffic movements to and from the site in the form of vans, utilities and utes. At peak construction, the workforce is expected to be approximately 1,800 for the main works, with an additional 50 workers for the HV cabling.

For a conservative assessment at peak construction, a total on-site workforce of 1,850 (inclusive of Lumea HV cabling works) is assumed, with 70% travelling as car drivers (resulting in 1,295 light-vehicle generated). Noting that the road network peak is 07:00–08:00 am, while the construction works start at 7 am, by which the majority of workers arrive before the network peak. Accordingly, only 30% of worker traffic is expected to coincide with the network peak, yielding an estimated 389 peak-hour LV trips ($1,850 \times 70\% \times 30\% = 389$).

Actual peak flows are expected to be lower through staggered shift times, shuttle services aligned to shift changes, and active car-pool/public transport incentives. Impacts due to the traffic generation of the construction worker population has been assessed by modelling the nearby intersection, which has been discussed further in Section 5.1.

4.5 Construction Vehicle Parking

Limited worker or subcontractor parking will be provided on the construction site. All workforce parking will be off-site at the following locations:

- A portion of a leased Goodman warehouse to the north of the site
- A vacant Goodman lot north of the warehouse (Lot 106) may also be leased for worker parking
- Adjacent to the south of the site, which is a currently vacant NEXTDC-owned site.

Figure 23 shows the locations for workers' parking.

As the parking strategy relies on off-site supply, the parking arrangements will be supported by supplementary shuttle services to manage worker movements to and from the above parking areas and the site. Given the scale of the development, the Contractor will also prepare and implement a Construction Worker Transport Strategy to reduce single-occupant vehicle use and minimise on-street parking demand.

If additional parking management measures are required, they will include a formal car-pool program (ride-matching, priority set-down and reserved parking spaces for carpooling) and a shuttle bus linking the site and the nearest train station to the site at shift changes with published headways aligned to local public transport timetables. An on-site secure tool shed will be established in order to allow workers to safely leave tools and supplies to facilitate public transportation and carpooling as a more feasible option.

Monitoring (arrival counts, parking occupancy and worker surveys) will be used to adjust shuttle capacity and satellite supply so that adequate spare capacity is maintained and no public-road queuing occurs. Furthermore, the Contractor will continue to investigate further off-site/satellite parking within nearby industrial properties as required based on the evolving parking demands of construction.



Figure 23: Construction Worker Parking

4.6 Work Zones

Two Works Zones are proposed along the site frontage on Johnston Crescent and the NEXTDC owned lot to the south, extending approximately 164 m and 154 m, respectively. The zones will be established under FCC s138 approval and operated in accordance with AS 1742.3 and the approved TGS plans, with accredited traffic controllers providing continuous coverage to maintain safe traffic flow as shown in Figure 24.

Suitably qualified traffic controllers will provide continuous coverage during operating hours to meter truck arrivals/departures, manage pedestrian movements and ensure no queuing occurs on the live carriageway. Access to adjacent properties and services will be maintained at all times via delineated lanes and, where required, temporary driveway plates.

The Works Zones will be delineated through posted work-zone signage and pedestrian fencing/hoarding with setup/removal scheduled outside commuter peaks to minimise impacts on the local network. The Works Zone may be staged and repositioned as frontage works progress.

The Work Zones will be established strictly in accordance with the approved construction hours and will only be installed during periods when construction activities are being undertaken. Outside of approved work times, all temporary traffic control devices, signage, and delineation associated with the work zone will be removed or made inactive to reinstate normal traffic conditions. The works zone locations, length and width are shown in the TGS plans in Appendix D.

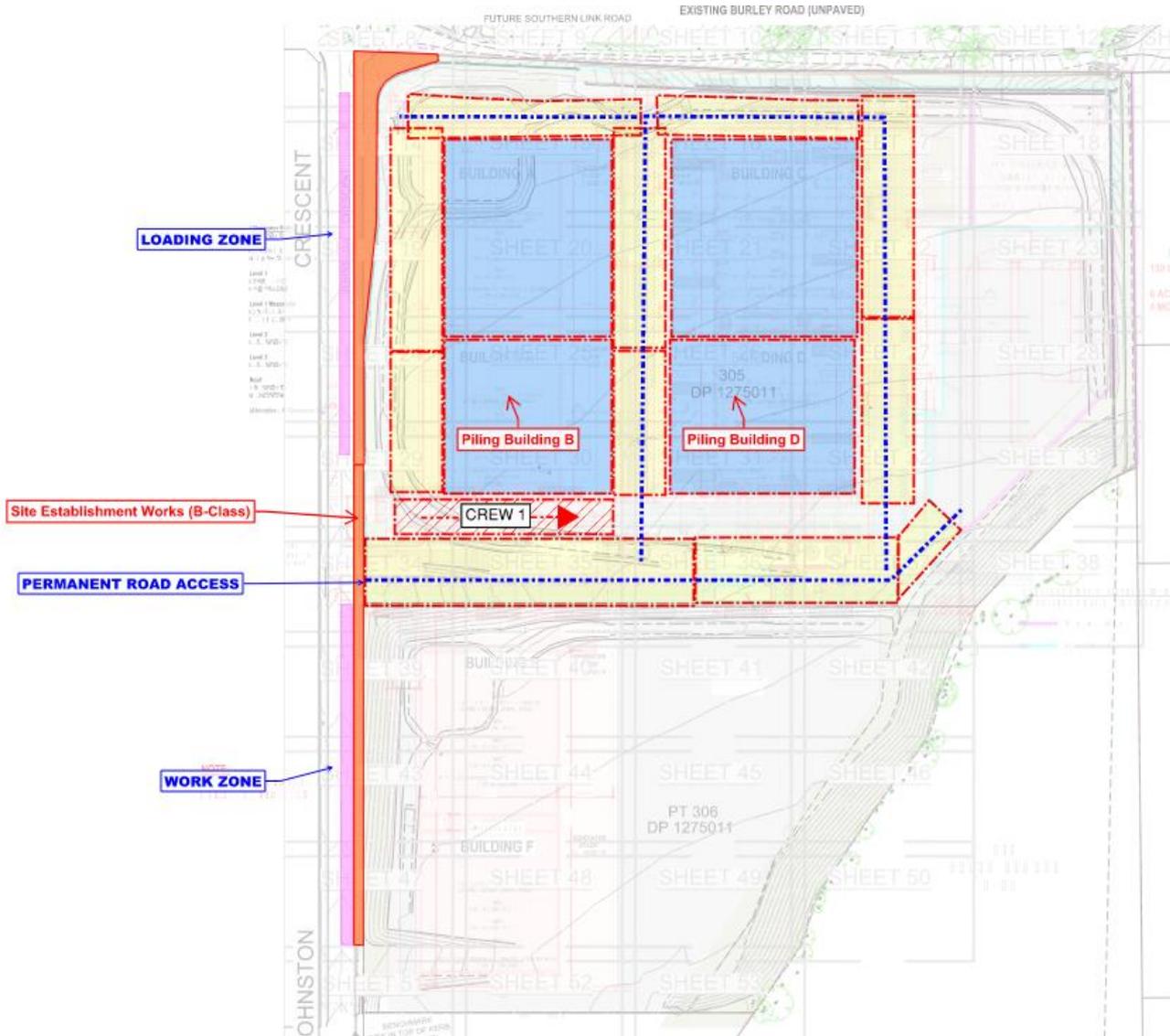


Figure 24: Work Zone Locations

Source: Multiplex (MPX)

The access and exit from and to the work zone is shown in Figure 25.



Figure 25: Work/Loading Zone Access and Exit

4.7 Swept Path Analysis

A swept path assessment has been undertaken to confirm that the proposed site access and internal circulation arrangements can safely accommodate the largest vehicles expected to access the site during construction. The assessment includes the substation transformer transport vehicle, which represents the critical design vehicle for the works. The swept path analysis confirms that the transformer vehicle can enter and exit the site in a forward direction. The transformer delivery will be subject to separate approval; however, the access has been designed to accommodate entry and exit in forward direction.

In addition, swept path testing has been carried out for other construction-related vehicles, including wide-load vehicles and articulated vehicles (AVs) accessing and egressing the designated work zone. All assessed vehicle movements demonstrate sufficient manoeuvrability within Johnston Crescent and site access arrangements. The swept path diagrams supporting this assessment are provided in Appendix F.

4.8 Road Closures

4.8.1 Main Works

Managed road and lane occupations would be carried out on Johnston Crescent to facilitate the tower-crane works during Stages 2–4. A temporary diversion will be established along the site frontage to install stormwater infrastructure during Stage 1; any associated road or lane closures will be subject to Council approval at the time of implementation.

Access to adjacent driveways will be maintained at all times via delineated lanes, temporary plates or short, scheduled holds under traffic control.

4.8.2 HV External Cable and Sydney West Expansion

As mentioned previously, the HV cable route will be delivered via two trenches progressing along Johnston Crescent and Old Wallgrove Road and will require sequential lane closures overnight. The lane closures will result in one lane of traffic in each direction where possible within portions of Old Wallgrove Road. Lane closures will be managed in accordance with the approved Traffic Guidance Schemes (TGS) provided in Appendix D.

Where practicable, traffic will be maintained in both directions through the use of a contraflow arrangement, particularly within sections of Old Wallgrove Road where sufficient carriageway width is available. This arrangement will allow one lane of traffic to operate in each direction under controlled conditions, minimising disruption to the surrounding road network.

All lane closures will be temporary, localised, and progressively reinstated as trenching works advance, ensuring that the duration and extent of traffic impacts are minimised. If other lane closures are in effect during the cabling works, alternative control/detour routes will be provided in accordance with the TGS to allow equipment/installations to progress.

4.9 Traffic Guidance Scheme

The Traffic Guidance Scheme (TGS) outlines the proposed traffic management to inform road users of changed traffic conditions in the vicinity of the construction site. TGS plans are prepared in accordance with TfNSW Traffic Control at Work Sites (TCAWS) Technical Manual Version 6.1 and included in Appendix D.

For the main works areas, temporary work zones will be established along Johnston Crescent and Old Wallgrove Road during construction hours. Where practicable, two-way traffic will be maintained at all times through the work zone. Temporary barriers, delineation devices, advance warning signage and reduced speed limits will be implemented in accordance with the approved TGS to provide a safe separation between live traffic and construction activities. Construction vehicle access and egress will be controlled by qualified traffic controllers, with vehicles required to wait for a suitable gap in traffic before entering or exiting the site. This will occur under the supervision of accredited traffic controller(s).

The trenching will be delivered in short, sequential sections, with the extent of works clearly delineated using temporary barriers or cones as shown in the TGS plans. Temporary speed limits will be implemented through the work zones, with advance warning signage provided on all approaches.

5.0 Impact of the Proposed Works

5.1 Future Traffic Models

5.1.1 Modelling Scenarios

The following traffic modelling scenarios detailed below in Table 12 have been prepared in order to assess the traffic impacts of the construction works on the road network, with the existing layout of the nearby intersections.

For assessment purposes, the 2023 volumes have been adjusted to a 2026 condition by applying a 2% annual growth rate over three years, to better reflect current background growth. The construction volume has been prepared based on information provided by Multiplex and Transgrid/Lumea.

Table 12: Modelling Scenarios

Scenario	Year / Time	Peak Hour Period	Description
Existing Model (refer to Section 2.5)	2023	7:00-8:00am 4:15-5:15pm	<ul style="list-style-type: none"> Existing (2023) intersection configurations Existing traffic volumes
2026 Model	2026		<ul style="list-style-type: none"> Existing (2026) intersection configurations 2023 traffic volumes with 2% per annum growth rate over three years
2026 Model + Construction Workers Traffic	2026 During Construction		<ul style="list-style-type: none"> Existing intersection configurations 2023 traffic volumes + 2% per annum growth rate over three years + Construction Volumes (heavy and light vehicles)

The following subsections describe the and present the projected intersection performance for each modelling scenario. It should be noted that the construction modelling scenario has been utilising *Practical Cycle Times*.

5.1.2 2026 Model

SIDRA intersection modelling has been undertaken to assess the traffic conditions and performance of the surveyed intersections; layout changes have been reflected in the 2026 model. Figures 25, 26, and 27 contain the layouts of the three intersections for the 2026 model and the 2026 model with construction traffic, as modelled in SIDRA.

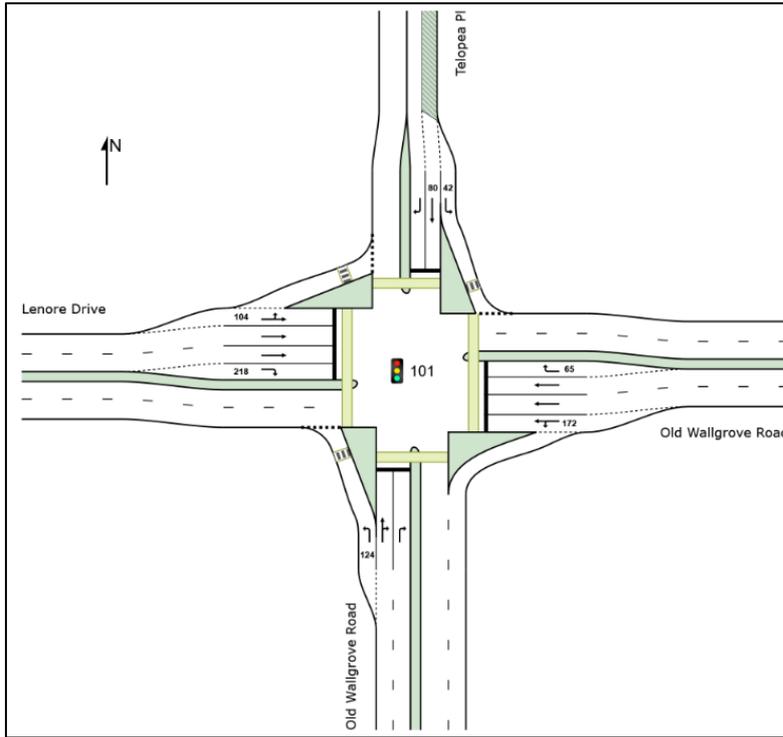


Figure 26: SIDRA Existing Intersection Layout – Old Wallgrove Rd / Lenore Dr / Telopea PI

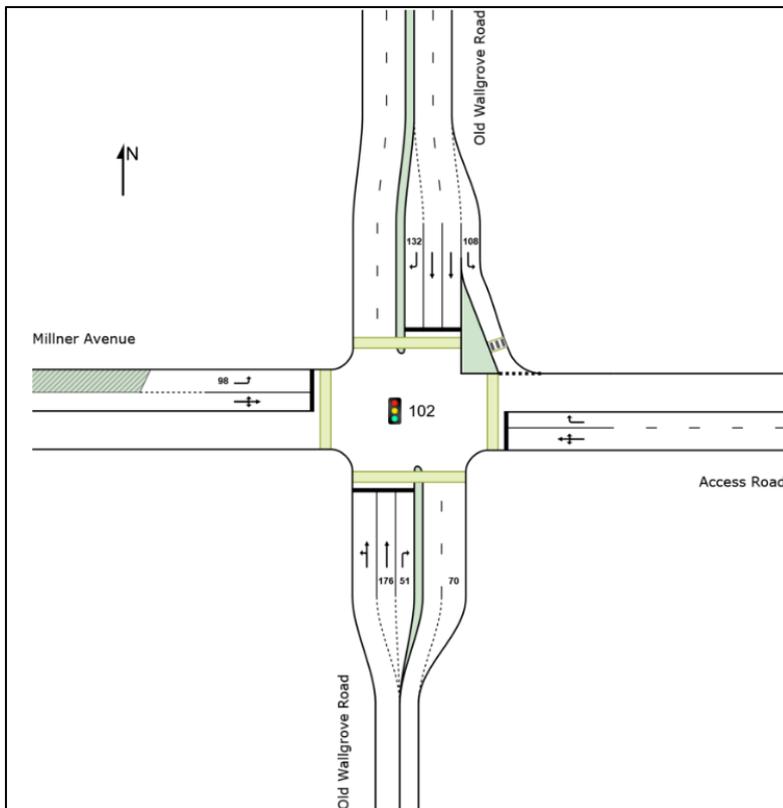


Figure 27: SIDRA Existing Intersection Layout – Millner Ave / Old Wallgrove Rd

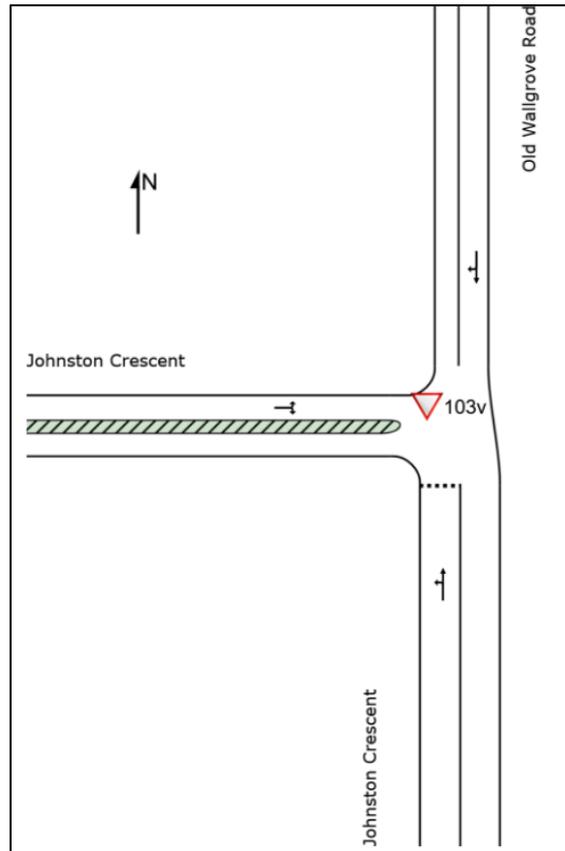


Figure 28: SIDRA Existing Intersection Layout – Old Wallgrove Rd / Johnston Cres

The construction works have been assessed to generate approximately 389 light-vehicle trips in the morning peak hour and 389 in the afternoon peak hour, based on a peak on-site workforce of 1,850 (inclusive of Lumea), with 30% travelling in the peaks (07:00–08:00 and 16:15–17:15) and 70% of workers driving rate ($1,850 \times 30\% \times 70\% = 389$). To determine the impacts on the surrounding road network, nearby intersections have been modelled under the 2026 model plus construction volumes scenario.

As a conservative measure, although heavy vehicles are unlikely to arrive during network peaks, 33 heavy-vehicle movements have been added to the peak-hour model; this allowance is derived from an expected 180 HV movements per day over an 11-hour workday (16 per hour on average).

5.1.3 Trip Distribution

A traffic distribution has been developed based upon the existing traffic volume patterns and distributions surveyed and provided in Section 2.4.2.

All traffic accessing and departing the subject site will do so via a through movement onto Johnston Crescent from Old Wallgrove Road and vice versa. All development traffic has been assumed to originate evenly from either westbound Old Wallgrove Road or eastbound Lenore Drive.

Accordingly, the development and cumulative traffic volumes assessed have been distributed across the network during the morning and afternoon peak periods as illustrated in Figure 29.

Light vehicle traffic will be distributed across the designated off-site parking areas (leased Goodman warehouse, Lot 106 and Lot 306); however, as a conservative assessment, the end destination has been assumed as the construction site. Heavy vehicle movements have been distributed on the network in accordance with the identified construction haul routes, as provided in Section 4.1.

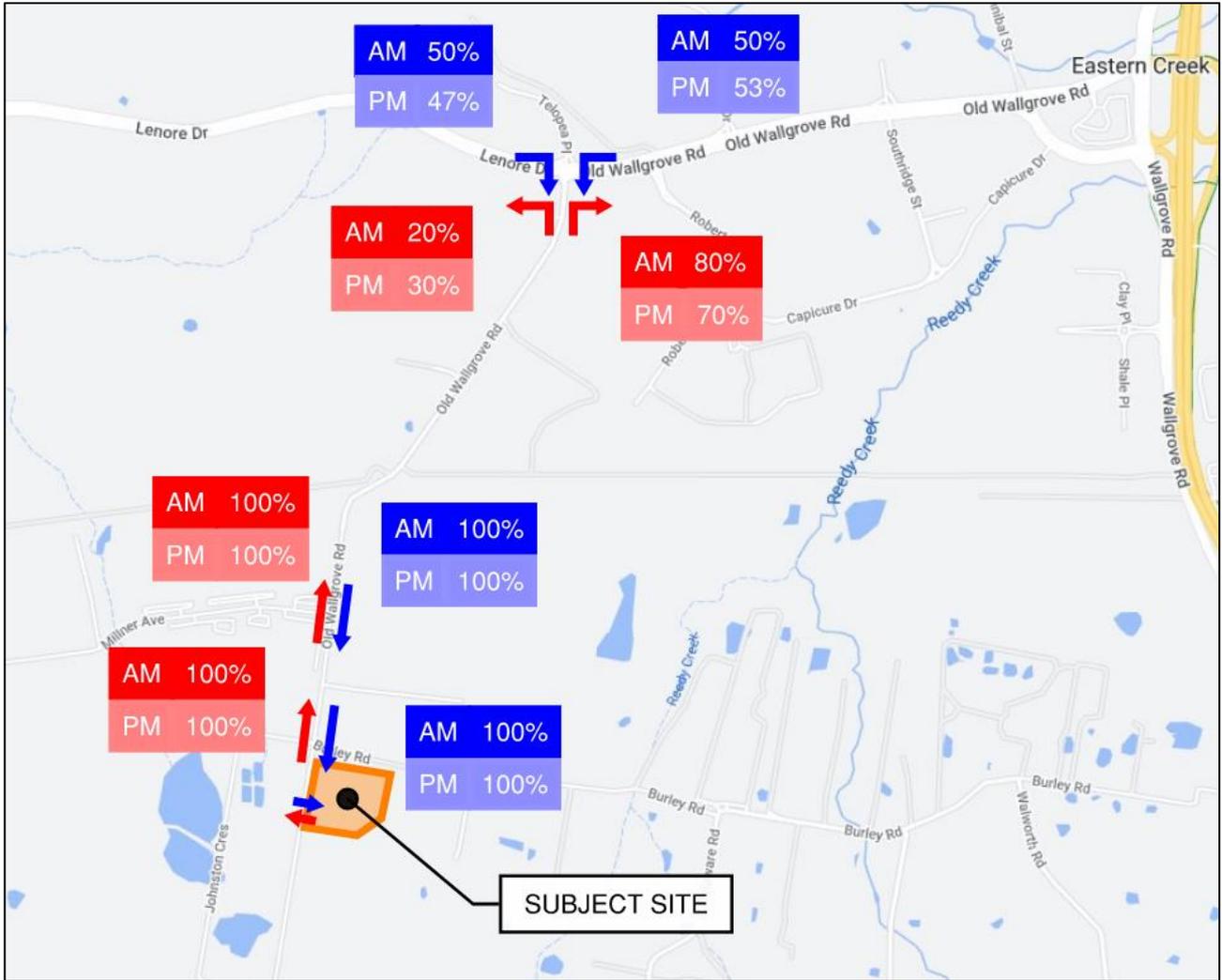


Figure 29: Post Development Trip Distribution

5.1.4 Construction Works Projected Traffic Volumes

Based on the traffic generation assessment for the construction works and the distribution provided above, Figure 30 – Figure 32 indicate the projected traffic volumes at the subject intersections.

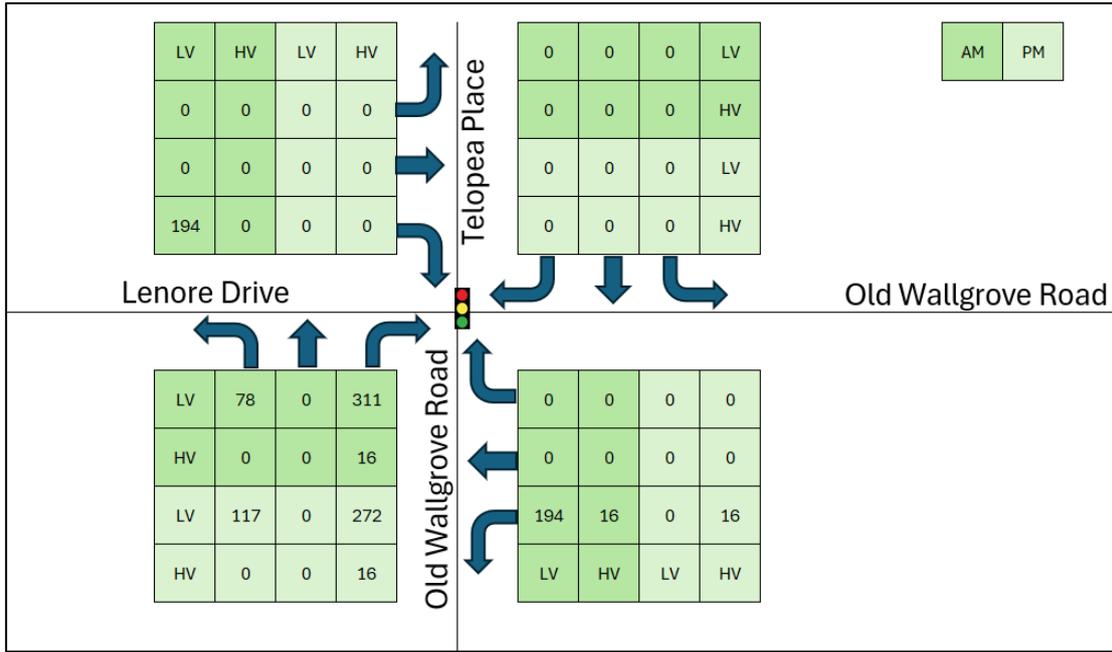


Figure 30: Construction Works Volumes Lenore Drive / Old Wallgrove Road / Telopea Place

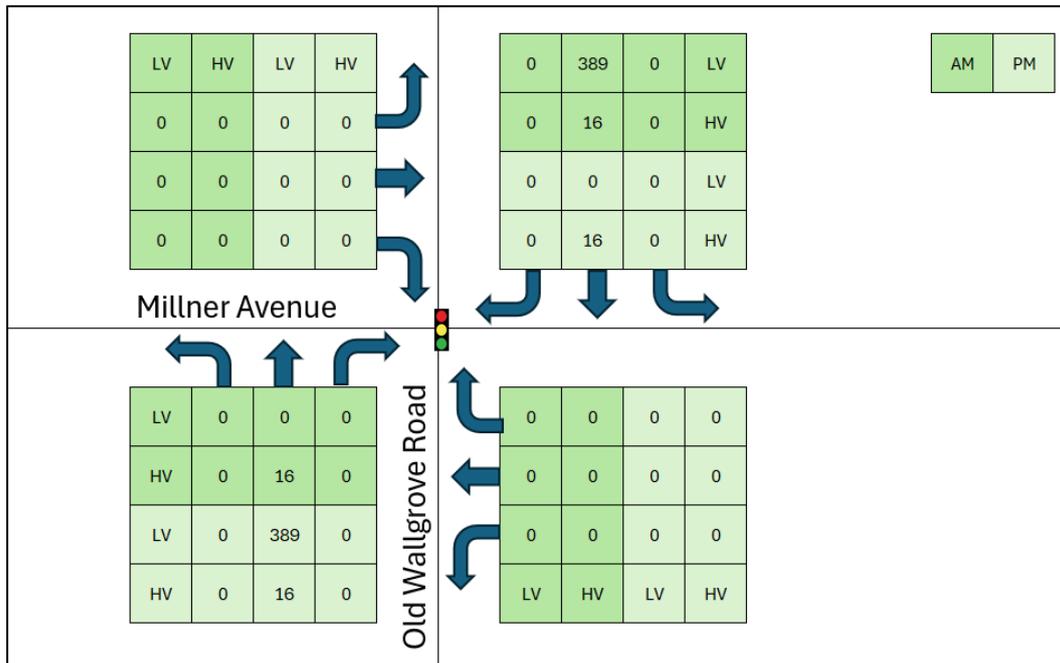


Figure 31: Construction Works Volumes Intersection of Old Wallgrove Road / Millner Avenue

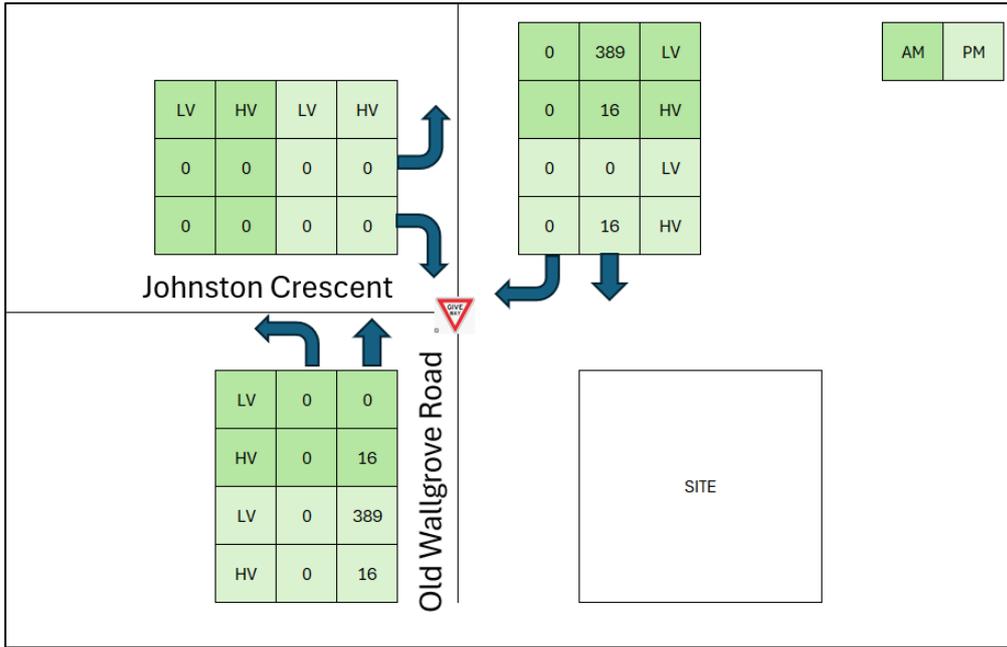


Figure 32: Construction Works Volumes Intersection of Old Wallgrove Road / Johnston Crescent

5.1.5 Intersection Performance

Table 13 summarises the existing and projected operation and performance of the surveyed intersections during the peak construction works of the proposed development. Full SIDRA results are provided in Appendix E.

Table 13: Construction Works Intersection performance

Note: Data for unsignalised intersections is taken from the movement with the worst delay

Data for signalised intersections is the intersection total

Peak Period	DOS			AVD			95% Queue Length (veh)			LOS		
	2023 Existing	2026 Model	2026 + CV	2023 Existing	2026 Model	2026 + CV	2023 Existing	2026 Model	2026 + CV	2023 Existing	2026 Model	2026 + CV
Telopea Place / Lenore Dr / Old Wallgrove Rd (signalised)												
AM	0.665	0.918	0.929	26.1	24.0	26.4	13.7	16.6	20.4	B	B	B
PM	0.872	0.825	0.914	31.4	30.0	27.1	23.3	9.6	17.2	C	B	B
Old Wallgrove Rd / Millner Ave (signalised)												
AM	0.590	0.620	0.623	15.2	13.5	12.1	10.2	10.0	10.1	A	A	A
PM	0.374	0.402	0.472	14.7	11.6	13.1	5.8	3.9	5.4	A	A	A
Old Wallgrove Rd / Johnston Cres (unsignalised)												
AM	0.012	0.013	0.059	6.2	6.2	7.9	0.0	0.0	0.2	A	A	A
PM	0.087	0.093	0.469	6.8	6.8	6.8	0.3	0.3	2.7	A	A	A

As shown in Table 13, while there are minor increases in degree of saturation (DoS) at some approaches, the average delays and 95th-percentile queues at the signalised intersection improve relative to 2023 due to the 2026 layout upgrades. The overall Level of Service at the signalised junction improves from LoS C to LoS B in the PM peak.

Across all surveyed intersections, the addition of construction volumes is not expected to materially change performance in either peak period. On this basis, no intersection upgrades are required as a result of the construction works and all intersections are expected to continue operating at a satisfactory level of service under the 2026 + construction scenario.

5.2 Local Traffic Impacts

Traffic impacts from the construction works are expected to be limited to the truck routes and construction workers' parking detailed in this report.

As noted above, the signalised intersection performs better in the 2026 scenario than in 2023 due to layout changes. Under the 2026 + construction scenario, intersection operation remains satisfactory relative to 2026, with only minor changes observed. Accordingly, construction traffic is not expected to alter local traffic patterns or intersection operations.

Traffic flows will be further moderated by the delivery booking/call-up system, gate metering with internal holding (no public-road queuing), and workforce mode-shift measures (off-site parking with shuttle, car-pooling, staggered shifts).

5.3 Public Transport

All public bus stops and routes as described in Section 2.2 of this report will continue operation without distribution. Bus routes and timetables on Old Wallgrove Road/Wallgrove Road/The Horsley Drive corridors will not be impacted by the construction works.

The Contractor will maintain safe pedestrian access and queuing at all times. Access to all adjoining properties will be maintained throughout the works.

5.4 Parking Impacts

Construction will increase worker parking demand; however, this CTMP adopts an off-site parking hierarchy to keep the frontage clear and prevent spill-over. As mentioned previously, the Contractor will accommodate workforce parking off-site at the leased Goodman warehouse, the vacant Goodman lot north of the warehouses (Lot 106), and the adjacent vacant lot, supported by shuttle services at shift changes (headways aligned to rostered starts/finishes). These supplies will be brought online as the workforce ramps up, ensuring adequate spare capacity.

Worker kerbside parking on Johnston Crescent and nearby streets is strictly prohibited due to prevailing 'No Stopping' conditions. Workers will be encouraged through induction and ongoing communications to car-pool and use public transport or other sustainable modes to reduce single-occupant vehicle trips. Shuttle capacity, roster staggering and satellite supply will be scaled as required based on monitoring (occupancy counts, gate logs and complaints register) so that parking demand is contained off-site and no queuing occurs on the public road. Parking demand will be monitored closely to ensure there are no adverse impacts on surrounding businesses.

5.5 Pedestrians

Public pedestrian movements through the site shall be prohibited at all times during construction. The site will need to be secured from pedestrian access with site fencing and hoarding.

As pedestrian volumes within the surrounding road network are minimal, it is not anticipated that the proposed works will generate significant impacts to the safety and amenity of pedestrians. The footpath along the site frontage will be maintained at all times and protected by Class B hoarding. During periods of active vehicle loading/unloading, short-term restrictions may apply; during these periods traffic controllers will temporarily divert pedestrians to the western side of Johnston Crescent via a signed detour.

Appropriate pedestrian traffic measures will be in place such as signage, traffic controllers and barriers to control access. This will be detailed in a Traffic Guidance Scheme as detailed in Appendix D. Pedestrian access to the site will be restricted by site fencing and boarding. Directional signage will be provided to guide pedestrians around the site and access will be maintained to adjacent operational buildings.

5.6 Cyclists

No dedicated cycleways are present in the vicinity of the site and cycling activity is expected to be limited. Any cyclists on the roadway will continue to follow the same routes and impacts to cyclists is anticipated to be negligible.

5.7 Public Infrastructure

When an oversize vehicle is required to access the site, some mounting or crossing of public kerbs and medians may be necessary. The builder will be responsible for repairing any damage to public infrastructure due to vehicle movements. Any other road markings damaged as a result of vehicles associated with the construction shall be repaired as the responsibility of the builder.

The developer may be held liable for any damage to public infrastructure in the vicinity of the site occurring as

a result of the construction works.

5.8 Cumulative Local Impact

The surrounding area is characterised predominantly by industrial uses, including Horsley Park, Eastern Creek and Smithfield. Any nearby construction activity that does occur is anticipated to be primarily reliant on the arterial road network, including Old Wallgrove Road, The Horsley Drive and the M7 Motorway. These roads are designed to accommodate heavy vehicle movements associated with industrial uses and are expected to have sufficient capacity to absorb construction traffic and the proposed development traffic.

Nearby projects and construction works have been identified in the following subsections. The cumulative impact will be further assessed and addressed below.

Should alternative project construction works commence near the site, the site manager shall be responsible for liaising with the site manager of the nearby site. In particular, communication across sites should ensure:

- Overall project programs are to be identified and shared
- High-volume days or periods (such as concrete pours) are to be communicated, and where possible are to be coordinated to avoid excessive impact to the road network and commenced so as to complete works within the permitted construction hours
- Oversize / over mass delivery days are to be communicated, and where possible are to be coordinated to avoid excessive impact to the road network
- Traffic control measures (including Traffic Guidance Schemes) are to be shared if these may be relevant to construction vehicle routes for surrounding projects

Overall, given the nature of surrounding land uses, the capacity of the surrounding road network, and the proposed traffic management measures, the cumulative local traffic impacts associated with the proposed works are expected to be manageable and acceptable.

5.8.1 Oakdale East Industrial Estate

The Oakdale East Industrial Estate is a major industrial development located at 2–10 Old Wallgrove Road, Horsley Park, immediately adjacent to and north of the S4 site. The project comprises multiple precincts and warehouse/distribution centre buildings delivered in multiple stages (including warehouse precincts, civil works and intersection upgrades) and has been progressively constructed from late 2023 into 2025 and beyond. Given the advanced state of works and the staged delivery over recent years, this project is not anticipated to generate substantial concurrent construction traffic that would materially compound the S4 works on the local road network. Furthermore, as construction works has been ongoing over the last few years the traffic volumes generated by this site would have been picked up in the traffic surveys incorporated into the intersection modelling presented earlier in this report.

5.8.2 NEXTDC “S7” Data Centre Campus (Eastern Creek):

S7 Project is in Eastern Creek, roughly 5–6 km north of S4. Subject to planning approval, the first phase of S7 is expected to be delivered by the second half of 2027. It's expected that S7 construction would overlap with S4 timeline. Any concurrent construction traffic would likely use the arterial road network (e.g. Wallgrove Road, Old Wallgrove Road, and the M4/M7 motorways) that connects these sites. Those arterial routes have substantial capacity, and the additional trucks from both S4 and S7 can be absorbed into the traffic flow. The S4 project team will coordinate with the S7 developers as needed to stagger peak construction activities and ensure traffic management plans are aligned.

5.8.3 Echidna Data Centre (Eastern Creek):

Echidna data centre has been under construction at Eastern Creek, roughly 5 km north of the S4 site. This two-storey, 35 MW facility is currently in its fit-out phase with base building works complete. The project is expected to be operational and completed before S4's main construction begins; it is not anticipated to occur concurrently with S4. Thus, no cumulative traffic impact is expected from this project's construction period.

During construction, traffic impacts will be temporary, localised, and managed through staged works in accordance with the approved Construction Traffic Management Plan and TGS Plans.

5.9 Road Safety

5.9.1 Construction Vehicle Access Points

The vehicle access points will be managed via automated gates that ensure no unauthorised or unsafe access is permitted for vehicles or pedestrians. These gates will have warning systems to notify pedestrians of movements to ensure safety. Traffic control at key pedestrian/vehicle interface points will also enable safe pedestrian movements across the construction access driveway.

No adjoining property access will be blocked as a result of the construction works, and all loading and unloading activities will be undertaken within the site boundary to prevent disruption to neighbouring properties.

All access control and pedestrian management measures will be implemented in accordance with the approved Traffic Guidance Schemes (TGS), which outline the placement of signage, barriers, and warning systems to ensure compliance with Austroads and TfNSW traffic control requirements.

5.9.2 Construction Vehicle Routes and Intersections

The state and regional road network is constructed to a high standard and would comfortably accommodate all construction vehicles. The state and regional roads used to access the site include Lenore Drive and Old Wallgrove Road (refer to Figure 2).

Key nearby intersections comprise two signalised junctions at Old Wallgrove Road/Millner Avenue and Old Wallgrove Road/Lenore Drive, and one unsignalised T-intersection at Johnston Crescent/Burley Road.

Signalised intersections have minimal safety concerns as all road users are managed in a safe and controlled manner.

The unsignalised T-intersection at Johnston Crescent/Burley Road contains suitable sight distances for truck drivers turning left onto Johnston Crescent.

5.9.3 Emergency Services

Emergency access to the site will be maintained during the works.

Emergency services access to all adjacent properties will be maintained under the existing conditions, with no impacts as a result of the construction works. Emergency vehicle access within the construction site, if required, will be managed on a case-by-case basis.

5.9.4 Communication of Works

Prior to any site works taking place, notification of commencement of the works shall be distributed to the neighbourhood. Notification is to include information on the type of works, hours of operation and contact numbers for further information or comment. Community notification will be undertaken as per a Construction Management Plan that will be prepared once the Contractor has been appointed.

Traffic control advance warning signage in accordance with Roads and Maritime Services guidelines and Australian Standards is to be in place to notify motorists of roadwork and when traffic controllers are present. Sign size is to be size “A” and is to be monitored throughout the works to ensure they are clearly visible.

As part of the site induction procedures, all contractors will be made aware of the finalised Construction Traffic Management Plan, the Traffic Guidance Scheme(s) and their responsibility to adhere to these plans.

6.0 Driver Code of Conduct

The objectives of the Driver Code of Conduct are to minimise the impact on the road network, reducing conflicts with other road users, limit road traffic noise, and ensure drivers are using the designated routes for accessing and leaving the site. This document shall be distributed to site workers and drivers as necessary.

It is recommended to establish a program or a checklist to ensure that truck drivers comply with the Driver Code of Conduct.

Minimise Impacts to Road Network

To minimise the impacts of earthworks and construction on the local and regional road network:

- Always obey all applicable road rules and laws
- Drivers to obey road speed limit and reduce the speed while approaching nearby intersections. Heavy braking can damage the roads.
- Drivers should avoid local, narrow roadways where possible.
- Drivers should follow specified truck routes (see Section 4.1 of CTMP, and enquire if unsure)

Minimise Conflicts with Other Road Users

To minimise conflicts with other road users including pedestrians, cyclists or private vehicle drivers:

- Drivers should be mindful of pedestrians and cyclists along all haulage routes
- Drivers should not obstruct access to any public roads, residential driveways, or pedestrian footpaths
- All loading and unloading will occur wholly within the site or any approved Works Zones
- Drivers should exit the site in a forward motion and check their left and right twice while exiting to ensure the safety of pedestrians, cyclists and other vehicles is maintained
- Upon exiting, drivers must wait for a suitable gap in traffic. The Roads Act does not give any special treatment to trucks exiting a construction site, but the vehicles on the road have the right-of-way
- Drivers should obey the traffic controllers while entering and exiting the site
- Drivers should be aware of site's surrounding conditions including speed limits, other traffic controls and pedestrian routes. This information can be presented to drivers during site inductions
- Drivers should be aware that construction vehicle movements are to be scheduled outside of peak traffic periods where possible.

Minimise Road Traffic Noise

To minimise the noise impacts on the community resulting from driving heavy vehicles:

- Drivers should reduce speed to reduce instances and severity of compression braking, including when approaching speed humps or raised zebra crossings
- Limit any excessive or unnecessary use of horns, in particular outside of working hours

Environmental Control

For safe environmental management:

- Construction vehicle wheels shall be cleaned prior to leaving the site to prevent transport or dust, dirt, or gravel from the worksite onto the road network or pedestrian footpaths.
- All loads are to be sealed or covered when entering or leaving the site. Loading of disposable material into vehicles leaving the site is to occur only within site.

Certificate and Approvals

Approval may need to be obtained from TfNSW, Fairfield City Council and other relevant authorities. Approval may be required for items including, but not limited to:

- Road occupancy approvals
- Hoarding/fencing approvals
- Oversized vehicle use on local roads

Only certified personnel will be used on site to implement, monitor and carry out the Traffic Control Plan.

Responsibility for acquiring the necessary certificates, permits and/or approvals rests with the Contractor and must be completed prior to commencement of the associated works.

Traffic Guidance Scheme and Signage

Temporary construction traffic related signposting will need to be developed in accordance with AS 1742.3 – Traffic Control Devices for Works on Roads.

During construction the contractor shall each morning, prior to work commencing, ensure all signage is erected in accordance with the TGS and is clearly visible. Each evening, upon completion of work, the contractor is to ensure relevant signage is removed as required. A review of the TGS(s) can be undertaken as required to determine any need for future amendments.

Prepared by
TTW (NSW) PTY LTD



AMMAR AHMED
Traffic Engineer

Authorised By
TTW (NSW) PTY LTD



SOPHIE SLADE
Senior Traffic Engineer

Appendix A – Blacktown & Fairfield Consultation Records

Ammar Ahmed

From: Gaurab Ghimire <gghimire@fairfieldcity.nsw.gov.au>
Sent: Friday, 20 February 2026 3:47 PM
To: Grace Carpp; milos.erceg@multiplex.global
Cc: Rohan Makkar; Sophie Slade; Ammar Ahmed
Subject: RE: SSD-63741210 - NEXTDC S4 - Final CTMP- Information requested
Attachments: CTMP approval with conditions- Johnston Crescent.pdf

[External Email]: Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Grace,

Please find the approval with conditions for the submitted Construction Traffic Management Plan and additional information.

Please note the approval doesn't consist of the hoarding part and is being assessed by our Assets engineers.

Any queries, please let me know.

Kind regards,

Gaurab Raj Ghimire

Professional Engineer(Traffic and Transport) | Design Services

City Delivery

PO Box 21, Fairfield NSW 1860

P 9725 0301

gghimire@fairfieldcity.nsw.gov.au

Customer Service: 02 9725 0222 | PO Box 21 Fairfield NSW 1860

www.fairfieldcity.nsw.gov.au

mail@fairfieldcity.nsw.gov.au



We acknowledge the Cabrogal of the Darug nation who are the Traditional Custodians of this Land.

We also pay our respect to the Elders both past, present and emerging of the Darug Nation.



From: Grace Carpp <Grace.Carpp@ttwengineers.com>

Sent: Friday, 20 February 2026 10:41 AM

To: Gaurab Ghimire <gghimire@fairfieldcity.nsw.gov.au>; milos.erceg@multiplex.global

Cc: Rohan Makkar <rohan.makkar@multiplex.global>; Sophie Slade <Sophie.Slade@ttwengineers.com>; Ammar Ahmed <Ammar.Ahmed@ttwengineers.com>

Subject: RE: SSD-63741210 - NEXTDC S4 - Final CTMP- Information requested

EXTERNAL EMAIL - This email was sent by a person from outside your organization. Exercise caution when clicking links, opening attachments or taking further action, before validating its authenticity.

Hi Gaurab,

Please see attached updated TGS plans with the works zone not included.

Let us know if you need anything further to enable to construction works to start on site.

Thanks,
Grace



Grace Carpp | Associate (Civil)

+61 2 9439 7288 | +61 2 8437 7278 | Grace.Carpp@ttwengineers.com

TTW Engineers | Sydney

From: Gaurab Ghimire <gghimire@fairfieldcity.nsw.gov.au>

Sent: Friday, 20 February 2026 9:54 AM

To: Grace Carpp <Grace.Carpp@ttwengineers.com>; milos.erceg@multiplex.global

Cc: Rohan Makkar <rohan.makkar@multiplex.global>; Sophie Slade <Sophie.Slade@ttwengineers.com>; Ammar Ahmed <Ammar.Ahmed@ttwengineers.com>

Subject: RE: SSD-63741210 - NEXTDC S4 - Final CTMP- Information requested

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Hi Grace,

Thank you for the clarification. Please find my additional comments below:

- Due to significant heavy vehicle movements, TGS for all the work stages should be provided. A TGS will be provided for subsequent stages (such as for the HV transmission route) once the design and construction staging has been finalised. The current CTMP provides TGS plans for the initial works to occur.
The TGS provided in the CTMP is with work zones and stage 1 and 2 doesn't have work zones. Hence please provide the TGS for the stages without work zone.

Any queries, please let me know.

Kind regards,

Gaurab Raj Ghimire

Professional Engineer(Traffic and Transport) | Design Services

City Delivery

PO Box 21, Fairfield NSW 1860

P 9725 0301

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We acknowledge the Cabrogal of the Darug nation who are the Traditional Custodians of this Land.

We also pay our respect to the Elders both past, present and emerging of the Darug Nation.



From: Grace Carpp <Grace.Carpp@ttwengineers.com>
Sent: Thursday, 19 February 2026 6:21 PM
To: Gaurab Ghimire <gghimire@fairfieldcity.nsw.gov.au>
Cc: Rohan Makkar <rohan.makkar@multiplex.global>; Sophie Slade <Sophie.Slade@ttwengineers.com>; Ammar Ahmed <Ammar.Ahmed@ttwengineers.com>
Subject: RE: SSD-63741210 - NEXTDC S4 - Final CTMP

Hi Gaurab.

Thanks for the quick turnaround, really appreciated on our end. I've looped in MULTIPLEX the contractor on site who have assisted in pulling together some of the response below. Return comments in **green**.

The Planning Secretary has also requested written correspondence from yourselves that the provided CTMP is sufficient to commence the initial construction activities on site. Noting that this is a multi-staged project that will require ongoing consultation through both the Section 138 process and necessary approvals are you able to respond that you agree this additional information requested should not preclude the construction works commencing for the bulk earthworks activities on the site?

Thanks again for your assistance.

Cheers,
Grace



Grace Carpp | Associate (Civil)

+61 2 9439 7288 | +61 2 8437 7278 | Grace.Carpp@ttwengineers.com

TTW Engineers | Sydney

From: Gaurab Ghimire <gghimire@fairfieldcity.nsw.gov.au>
Sent: Thursday, 19 February 2026 3:16 PM
To: Ammar Ahmed <Ammar.Ahmed@ttwengineers.com>
Cc: Grace Carpp <Grace.Carpp@ttwengineers.com>
Subject: RE: SSD-63741210 - NEXTDC S4 - Final CTMP

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Hello Ammar and Grace,

Please provide the additional information below for the assessment of the CTMP.

- An explanation should be provided to justify the need for the proposed work zone on Johnston Crescent, noting that the construction site already has sufficient on-site area to accommodate deliveries.

At the initial stage of the project, we will be managing all deliveries within the site. The temporary construction zone on Johnston Crescent has been carefully planned to ensure it is implemented only when operationally necessary. The requirement for this zone arises once crane operations extend toward Johnston Crescent, at which point certain materials handling activities associated with Buildings A and B cannot be safely accommodated within the site’s internal boundaries. Due to the buildings’ proximity to the street and the crane’s operating radius, an external controlled area becomes essential for safe unloading of larger or complex materials.

At that stage of construction, the work zone will provide a controlled environment that maintains appropriate separation between construction activities, traffic, and pedestrians, thereby reducing safety risks that cannot be mitigated within the site alone. Additionally, given the presence of multiple concurrent developments along Johnston Crescent, the work zone will support coordinated delivery management and minimise potential congestion or conflict points on the roadway.

- The average number of construction vehicle movements per day (both inbound and outbound), along with the corresponding vehicle types (e.g. AV, HRV), should be provided for each construction stages.

Construction Stage	Indicative Average Vehicle Movements per Day	Typical Vehicle Types
1) Early Works (Site Prep, Demolition, Bulk Earthworks)	30–60 movements/day	HRV (spoil removal, fill import), AV (plant delivery), LV (trades)
2) Substructure & Structural Construction	20–40 movements/day	HRV (concrete, reinforcement, steel), AV (precast, structural steel, cranes), LV (trades)
3) Fitout & Finishes (Services, Internal Works, Commissioning)	5–20 movements/day	LV (trades/technicians), HRV (mechanical/electrical equipment), occasional AV (major plant)

- Consultation with the project manager for 3 Johnston Crescent should be undertaken, as construction for their development has commenced. The discussion should focus on a coordinated approach to manage traffic on Johnston Crescent. The outcomes of this consultation are to be provided to Council’s Traffic Branch. Also, after the consultation/discussion a combined TGS, plans for the days when the works happen together on road for both development should be provided to Council.

MPX Site Manager Milos has spoken with the Texco Site Manager at 3 Johnston crescent today 19/02 and we will coordinate deliveries and works to minimise disruption. When works will be occurring on road concurrently a combined TGS can be prepared.

- Due to significant heavy vehicle movements, TGS for all the work stages should be provided.

A TGS will be provided for subsequent stages (such as for the HV transmission route) once the design and construction staging has been finalised. The current CTMP provides TGS plans for the initial works to occur.

Any queries, please let me know.

Kind regards,

Gaurab Raj Ghimire

Professional Engineer(Traffic and Transport) | Design Services

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mail@fairfieldcity.nsw.gov.au



We acknowledge the Cabrogal of the Darug nation who are the Traditional Custodians of this Land.

We also pay our respect to the Elders both past, present and emerging of the Darug Nation.



From: Gaurab Ghimire

Sent: Thursday, 19 February 2026 11:34 AM

To: 'Ammar Ahmed' <Ammar.Ahmed@ttwengineers.com>

Cc: Grace Carpp <Grace.Carpp@ttwengineers.com>

Subject: RE: SSD-63741210 - NEXTDC S4 - Final CTMP

Thanks Ammar.

Regards,
Gaurab Ghimire

From: Ammar Ahmed <Ammar.Ahmed@ttwengineers.com>

Sent: Thursday, 19 February 2026 10:15 AM

To: Gaurab Ghimire <gghimire@fairfieldcity.nsw.gov.au>

Cc: Grace Carpp <Grace.Carpp@ttwengineers.com>

Subject: RE: SSD-63741210 - NEXTDC S4 - Final CTMP

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Hi Gaurab,

Please find the requested Appendices attached and at the link below.

 [Appendix C,D and E.pdf](#)

Please let me know if you have any issues accessing it.

Thanks,
Ammar



Ammar Ahmed | Traffic Engineer

+61 2 9439 7288 | +61 2 8437 7233 | Ammar.Ahmed@ttwengineers.com

TTW Engineers | Sydney

From: Grace Carpp <Grace.Carpp@ttwengineers.com>

Sent: Thursday, 19 February 2026 9:57 AM

To: Ammar Ahmed <Ammar.Ahmed@ttwengineers.com>

Subject: RE: SSD-63741210 - NEXTDC S4 - Final CTMP



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TTW Engineers | Sydney

From: Gaurab Ghimire <gghimire@fairfieldcity.nsw.gov.au>

Sent: Thursday, 19 February 2026 9:56 AM

To: Grace Carpp <Grace.Carpp@ttwengineers.com>

Subject: FW: SSD-63741210 - NEXTDC S4 - Final CTMP

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Hi Grace,

As discussed on call, could you please send me the documents for Appendix C, D and E for the CTMP.

Regards,
Gaurab

From: Grace Carpp <Grace.Carpp@ttwengineers.com>

Sent: Tuesday, 17 February 2026 5:57 PM

To: Sunnee Cullen <SCullen@fairfieldcity.nsw.gov.au>

Cc: Rohan Makkar <rohan.makkar@multiplex.global>; Sophie Slade <Sophie.Slade@ttwengineers.com>

Subject: RE: SSD-63741210 - NEXTDC S4 - Final CTMP

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Hi Sunnee,

Once you have forwarded to the relevant technical person, if you could update us on timing of when we can expect the response that would be great. Also happy to have a quick briefing over the phone or via teams if that would be useful to expedite the response.

Thanks,
Grace



Grace Carpp | Associate (Civil)

+61 2 9439 7288 | +61 2 8437 7278 | Grace.Carpp@ttwengineers.com

TTW Engineers | Sydney

From: Grace Carpp
Sent: Tuesday, 17 February 2026 2:27 PM
To: 'Sunnee Cullen' <SCullen@fairfieldcity.nsw.gov.au>
Cc: Rohan Makkar <rohan.makkar@multiplex.global>; Sophie Slade <Sophie.Slade@ttwengineers.com>
Subject: RE: SSD-63741210 - NEXTDC S4 - Final CTMP

Hi Sunnee,

Thanks for your quick response on this one, much appreciated.

Development consent is at the link below. The relevant consent condition related to the CTMP is condition B35.

<https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-63741210%2120251224T003216.933%20GMT>

The approved architectural plans are at the link below:

<https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-63741210%2120260114T061309.740%20GMT>

The approved civil engineering plans are at the link below:

<https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-63741210%2120260114T061310.632%20GMT>

Let me know if you need anything further for your assessment.

Thanks,
Grace

From: Sunnee Cullen <SCullen@fairfieldcity.nsw.gov.au>
Sent: Tuesday, 17 February 2026 2:16 PM
To: Grace Carpp <Grace.Carpp@ttwengineers.com>
Cc: Rohan Makkar <rohan.makkar@multiplex.global>
Subject: RE: SSD-63741210 - NEXTDC S4 - Final CTMP

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Thanks Grace.

Can you please send through a copy of the development consent + copy of the approved plans and will forward to the relevant technical officers to review.

Kind regards,

Sunnee.

Sunnee Cullen

Manager Development Planning | Development Planning
City Development Directorate

02 9725 0256 | scullen@fairfieldcity.nsw.gov.au

Customer Service: 02 9725 0222 | PO Box 21 Fairfield NSW 1860

www.fairfieldcity.nsw.gov.au

mail@fairfieldcity.nsw.gov.au



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GARDEN ORGANICS
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DO THE RIGHT THING USE THE RIGHT BIN

From: Grace Carpp <Grace.Carpp@ttwengineers.com>

Sent: Tuesday, 17 February 2026 11:07 AM

To: Sunnee Cullen <SCullen@fairfieldcity.nsw.gov.au>

Cc: Rohan Makkar <rohan.makkar@multiplex.global>; Mail Mail <mail@fairfieldcity.nsw.gov.au>

Subject: SSD-63741210 - NEXTDC S4 - Final CTMP

Some people who received this message don't often get email from grace.carpp@ttwengineers.com. [Learn why this is important](#)

Hi Sunnee,

As part of our Construction Traffic Management Plan, the planning secretary at DPHI has requested we consult with yourselves on the final CTMP prior to us receiving our construction certificate to commence works on site.

We understand that Multiplex has been consulting with yourselves regarding items such as hoarding and that the previous preliminary CTMP has been reviewed as part of the SSSA approval.

As soon as possible are you able to please confirm that no further consultation is required? I have attached the final CTMP that has been submitted to the Planning Secretary at DPHI.

Kind Regards,
Grace



Grace Carpp | Associate (Civil)

+61 2 9439 7288 | +61 2 8437 7278 | Grace.Carpp@ttwengineers.com

TTW Engineers | Sydney

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In reply please quote: CRM 21/32327

Contact: Gaurab Ghimire on (02) 9725 0301

Grace Carpp
Associate Civil
TTW Engineers
Grace.Carpe@ttwengineers.com

Dear Grace,

SUBJECT: Construction Traffic Management Plan (CTMP) approval with conditions

I refer to your Construction Traffic Management Plan (CTMP) prepared for S4 Data Centre on 16 Johnston Crescent, submitted to Council on 17 February 2026.

Council's Traffic and Transport Branch have no objections to the Construction Traffic Management Plan (CTMP) subject to adherence with the following conditions:

1. All vehicles must enter and exit the site in a forward direction unless they are under the supervision of Transport for NSW (TfNSW) Accredited Traffic Controllers.
2. The largest vehicle travelling to and from the site shall be restricted to 19.6m Truck and Dog Trailer.
3. A Road Occupancy Permit is required from Fairfield City Council for any activities that occur on public roadway and/or road-related area that impact vehicular and/or pedestrian traffic flow. For example, the applicant requires temporary road closure or occupation of Council owned areas to undertake certain works. Please contact Mitchell Baker of Council's City Assets Branch on 9725 0222 should you have any questions regarding this matter.
4. All vehicles awaiting loading, unloading or servicing shall be parked on-site and not on adjacent/nearby public roads. Construction vehicles and trucks must not layover in local roads in the Fairfield Local Government Area and the site manager is to ensure adequate area is available for trucks upon arrival.
5. A separate application must be submitted to Council for assessment and approval of any Work Zone required in later stages of the project. No Work Zone signage is to be installed prior to receiving formal approval. Please note that Council's review may result in a Work Zone not being supported.
6. Restricted access vehicles must not travel on local roads unless the applicant has obtained permits from National Heavy Vehicle Regulator (NHVR). Requests to use these vehicles on public road(s) must be submitted to the NHVR at least 28 days prior to the vehicle scheduled travel date. Information on restricted access vehicles can be found on the *website* at www.nhvr.gov.au

7. Construction site personnel and visitors are to park on-site. To minimise the required off-street parking, the contractor is encouraged to use public transportation when travelling to and from the site where available.
8. Construction traffic shall use routes as per the approved Construction Traffic Management Plan.
9. If there is damage to the public roads or Council assets as a result of the project works or construction vehicle movements, Council shall be notified of the damage immediately.
10. Access for emergency vehicles is to be maintained, with suitable alternative access arrangements provided where required.
11. Deliveries shall be planned to regulate arrivals to avoid congestion i.e. minimize the number of trucks arriving at site at any one time with deliveries.
12. Additional requirements may occur in future should public amenity be detrimentally affected.
13. Council is to be notified of any change to the CTMP.
14. The applicant shall comply with reasonable directive of Council's Community Regulatory Services Branch in relation to matters in the public road.
15. Safe access to adjoining properties and pedestrian access at/near the site is to be maintained all times.
16. The use of any equipment or activities conducted in conjunction with construction works shall comply with the Noise Control Act.

Should you have any further enquiries regarding this matter, please contact Council's Traffic Engineer Gaurab Ghimire on 9725 0301.

Yours sincerely



Sandra Slewa
COORDINATOR TRAFFIC AND TRANSPORT

Ammar Ahmed

From: John Savanah <John.Savanah@blacktown.nsw.gov.au>
Sent: Friday, 20 February 2026 4:43 PM
To: Grace Carpp
Cc: Rohan Makkar; Jeffrey Mcdonald; Luis Soares; Sophie Slade; Ammar Ahmed
Subject: RE: SSD-63741210 - NEXTDC S4 - Final CTMP

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Hi Grace,

We are currently liaising with NEXTDC in regards to their proposed installation of the high voltage cables in Old Wallgrove Road.

The approval of your CTMP I believe will be dealt with by Fairfield Council.

Regards,



John Savanah
Engineer Civil Asset Maintenance

9839 6033 | 0436 528 258
PO Box 63 Blacktown NSW 2148
blacktown.nsw.gov.au

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From: Grace Carpp <Grace.Carpp@ttwengineers.com>
Sent: Friday, 20 February 2026 11:47 AM
To: John Savanah <John.Savanah@blacktown.nsw.gov.au>
Cc: Rohan Makkar <rohan.makkar@multiplex.global>; Jeffrey Mcdonald <Jeffrey.Mcdonald@blacktown.nsw.gov.au>; Luis Soares <Luis.Soares@multiplex.global>; Sophie Slade <Sophie.Slade@ttwengineers.com>; Ammar Ahmed <Ammar.Ahmed@ttwengineers.com>
Subject: RE: SSD-63741210 - NEXTDC S4 - Final CTMP

Hi John,

Just left a message. We're just chasing a response on the below as we are currently unable to commence on site until we hear back.

Thanks,
Grace

From: Grace Carpp <Grace.Carpp@ttwengineers.com>
Sent: Thursday, 19 February 2026 6:22 PM
To: John Savanah <John.Savanah@blacktown.nsw.gov.au>
Cc: Rohan Makkar <rohan.makkar@multiplex.global>; Jeffrey Mcdonald <Jeffrey.Mcdonald@blacktown.nsw.gov.au>; Luis Soares <Luis.Soares@multiplex.global>; Sophie Slade <Sophie.Slade@ttwengineers.com>
Subject: RE: SSD-63741210 - NEXTDC S4 - Final CTMP

Hi John,

Thanks again for your quick response to Sophie yesterday.

The Planning Secretary has also requested written correspondence from yourselves that the provided CTMP is sufficient to commence the initial construction activities on site. Noting that this is a multi-staged project that will require ongoing consultation through both the Section 138 process and necessary approvals are you able to respond that you agree this additional information requested should not preclude the construction works commencing for the bulk earthworks activities on the site?

Let me know if you have any further questions.

Kind Regards,
Grace

From: Sophie Slade <Sophie.Slade@ttwengineers.com>
Sent: Wednesday, 18 February 2026 12:05 PM
To: John Savanah <John.Savanah@blacktown.nsw.gov.au>
Cc: Grace Carpp <Grace.Carpp@ttwengineers.com>; Rohan Makkar <rohan.makkar@multiplex.global>; Jeffrey Mcdonald <Jeffrey.Mcdonald@blacktown.nsw.gov.au>; Luis Soares <Luis.Soares@multiplex.global>
Subject: RE: SSD-63741210 - NEXTDC S4 - Final CTMP

Hi John,

Thanks for getting back to me, much appreciated.

Understand that your main concern is regarding the HV cable positioning within the roadway, this will be documented and addressed through the detail cabling design and permitting process.

Are there any further comments your team would like to raise regarding the other construction activities described in the CTMP?

Thanks,



Sophie Slade | Senior Traffic Engineer

+61 2 9439 7288 | | Sophie.Slade@ttwengineers.com

TTW Engineers | Sydney

From: John Savanah <John.Savanah@blacktown.nsw.gov.au>
Sent: Wednesday, 18 February 2026 10:04 AM

To: Sophie Slade <Sophie.Slade@ttwengineers.com>

Cc: Grace Carpp <Grace.Carpp@ttwengineers.com>; Rohan Makkar <rohan.makkar@multiplex.global>; Jeffrey McDonald <Jeffrey.Mcdonald@blacktown.nsw.gov.au>

Subject: RE: SSD-63741210 - NEXTDC S4 - Final CTMP

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Hi Sophie,

Thank you for providing your information below, however our main concern is the proposed installation of the high voltage cables in Council's roadway and footpath.

We want to minimise the impact to the local traffic and the damage to Council's assets.

One of our condition is that the alignment of the cables be in the kerbside lane to avoid damage to the traffic lane pavement as well as reduce the disruption to the local traffic.

Please advise what you require from us.

Regards,



John Savanah

Engineer Civil Asset Maintenance

9839 6033 | 0436 528 258

PO Box 63 Blacktown NSW 2148

blacktown.nsw.gov.au

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First People of the Blacktown City region**

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From: Sophie Slade <Sophie.Slade@ttwengineers.com>

Sent: Wednesday, 18 February 2026 9:22 AM

To: John Savanah <John.Savanah@blacktown.nsw.gov.au>

Cc: Grace Carpp <Grace.Carpp@ttwengineers.com>; Rohan Makkar <rohan.makkar@multiplex.global>

Subject: RE: SSD-63741210 - NEXTDC S4 - Final CTMP

Morning John,

Just reaching out if you could please confirm receipt of the below email? If you could kindly indicate a timeframe for which we can have your completed review, that would be great as this project is working on an extremely tight timeframe.

Thank you!

Cheers,



Sophie Slade | Senior Traffic Engineer

From: Sophie Slade

Sent: Tuesday, 17 February 2026 2:46 PM

To: 'john.savanah@blacktown.nsw.gov.au' <john.savanah@blacktown.nsw.gov.au>

Cc: Grace Carpp <Grace.Carpp@ttwengineers.com>; Rohan Makkar <rohan.makkar@multiplex.global>

Subject: SSD-63741210 - NEXTDC S4 - Final CTMP

Hi John,

Thanks for your time on the phone today. As mentioned, as part of our Construction Traffic Management Plan, the planning secretary at DPHI has requested we consult with yourselves on the final CTMP prior to us receiving our construction certificate to commence works on site.

We understand that you have been in consultation already regarding the HV cabling works within the roadway. I have linked below the CTMP that has been submitted to the Planning Secretary at DPHI that addresses the construction of the data centre and the cabling works cumulatively for your review.

 [260119_S4_Construction Traffic Management Plan_\[1\].pdf](#)

Kind Regards,
Sophie

Development consent is at the link below. The relevant consent condition related to the CTMP is condition B35.

<https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-63741210%2120251224T003216.933%20GMT>

The approved architectural plans are at the link below:

<https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-63741210%2120260114T061309.740%20GMT>

The approved civil engineering plans are at the link below:

<https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-63741210%2120260114T061310.632%20GMT>

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S4 HORSLEY PARK DATA CENTRE SSSA

Community and Stakeholder
Engagement Outcomes Report

URBIS STAFF RESPONSIBLE FOR THIS REPORT WERE:

Associate Director	Aparna Casimir
Senior Consultant	Ned Anson
Consultants	Caidee Heriot Jacinta Semaan
Project Code	P0048038
Report Number	Final

Urbis acknowledges the important contribution that Aboriginal and Torres Strait Islander people make in creating a strong and vibrant Australian society.

We acknowledge, in each of our offices, the Traditional Owners on whose land we stand.

All information supplied to Urbis in order to conduct this research has been treated in the strictest confidence. It shall only be used in this context and shall not be made available to third parties without client authorisation. Confidential information has been stored securely and data provided by respondents, as well as their identity, has been treated in the strictest confidence and all assurance given to respondents have been and shall be fulfilled.

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You must read the important disclaimer appearing within the body of this report.

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1. EXECUTIVE SUMMARY

This Community and Stakeholder Engagement Outcomes Report (report) has been prepared by Urbis Ltd (Urbis) on behalf of NEXTDC Limited to accompany a detailed State Significant Development Application (SSDA) for the S4 data centre proposal at 16 Johnston Crescent, Horsley Park. The data centre site is legally described as Lot 305 in Deposited Plan 1275011.

This report has been prepared to address the Secretary's Environmental Assessment Requirements (SEARs) issued for the project (SSD-63741210). In February 2024, Urbis delivered an engagement program to provide the local community and stakeholders with information about the SSDA and encourage feedback.

Key themes of feedback received during the consultation period across all engagement activities included:

- Concern related to the changing character of Horsley Park as a result of industrial land uses

- Concern related to potential visual impacts

- Concern that public feedback will not influence the proposal.

This report details the community and stakeholder engagement undertaken from March 2022 to March 2024, as well as key themes of feedback provided and the project's response to this feedback.

It also outlines additional consultation undertaken by NEXTDC during 2024-2025 regarding the high voltage (HV) connection from the data centre site to the TransGrid Sydney West substation. This ancillary infrastructure would typically be undertaken separately via Part 5. However, NEXTDC was advised during the assessment of the SSDA that the HV connection would need to be included within the SSDA.

As such, further consultation was undertaken by NEXTDC with the Department of Planning, Housing and Infrastructure (DPHI), Transgrid, Lumea, Fairfield City Council and Blacktown City Council regarding the HV connection and as documented within this report.

2. INTRODUCTION

This report has been prepared to accompany a detailed SSDA for the proposed S4 data centre development at 16 Johnston Crescent, Horsley Park (SSD-63741210).

The project seeks consent for construction and operation of a data centre development and includes site preparation works, bulk earthworks and infrastructure, and construction of the buildings, ancillary facilities, and associated works, including a HV connection to deliver power to the site.

Specifically, the project comprises the redevelopment of the site as summarised below:

- Site preparation works including bulk earthworks including tree removal.
- Staged construction and operation of two data centre buildings comprising a total gross floor area (GFA) of 61,695m² including 56,464m² of technical data hall floor space and 5,231m² of ancillary office floor space, including 'front of house' meeting and administrative spaces.
- Ancillary development including a centralised security office building at the main vehicle entrance, on-site parking for 200 cars, business identification signage (pylon and elevation signage), civil and stormwater works and 12,769m² of deep soil landscaping.
- Provision of a high-voltage (HV) power connection delivering 294 megawatts of power, including a 330kV substation and a 33kV switching station, plus above ground diesel storage tanks and above ground water tanks for industrial water and fire water.
- The project will be delivered in four construction stages as follows:
 - Stage 1 = Building C, HV switching building, 330kV substation, HV external cabling route, entrance to site, centralised security office, and water tanks.
 - Stage 2 = Building D
 - Stage 3 = Building A
 - Stage 4 = Building B

This report has been prepared in response to the requirements contained within the Secretary's Environmental Assessment Requirements (SEARs) dated 27 October 2023 issued for the SSDA. Specifically, this report has been prepared to respond to the SEARs requirement issued below.

Table 1 SEARs compliance

SEARs item	Project response
26. Engagement	
<p>Detail engagement undertaken and demonstrate how it was consistent with the Undertaking Engagement Guidelines for State Significant Projects. Detail how issues raised and feedback provided have been considered and responded to in the project. In particular, applicants must consult with:</p> <p>The relevant Department assessment team.</p> <p>Any relevant local councils.</p> <p>Any relevant agencies (including the Western Parkland City Authority for development within the Western Parkland City).</p> <p>The community.</p> <p>If the development would have required an approval or authorisation under another Act but for the application of s 4.41 of the EP&A</p>	<p>This document outlines an approach to engagement that is consistent with the <i>Undertaking Engagement Guidelines for State Significant Projects</i>.</p> <p>The outcomes of the consultation approach, including how issues raised and feedback provided have been considered and responded to in the project will be captured in the: Engagement and Communications Outcomes Report</p> <p>EIS.</p>

SEARs item	Project response
Act or requires an approval or authorisation under another Act to be applied consistently by s 4.42 of the EP&A Act, the agency relevant to that approval or authorisation.	

2.1. THE SITE

The data centre site is located at 16 Johnston Crescent, Horsley Park within the Fairfield Local Government Area (LGA). The site is legally described as Lot 305 in Deposited Plan 1275011.

An aerial photograph of the site is provided in Figure 1 below. The site comprises vacant land which has been cleared of vegetation and does not contain any existing built form structures. Bulk earthworks approved under DA-893-201 are currently underway on the site.

Figure 1 Site aerial photograph



Source: Nearmap 2023

The site will be well serviced by infrastructure. The signalised intersection of Lenore Drive and Old Wallgrove Road at Eastern Creek is approximately 2 kilometres to the north, providing access to Wallgrove Road and the Westlink M7 Motorway to the east and Erskine Park Road and Mamre Road to the west. Each of these roads provides access to the M4 Motorway to the north and M5 Motorway to the south. A utilities and site services report will accompany the Environmental Impact Statement (EIS).

The site is located approximately 35 kilometres west of the Sydney Central Business District (CBD), 17 kilometres west of the Parramatta CBD and 10 kilometres north-east of the future Western Sydney International airport.

The site is within a developing employment precinct, including the ESR Horsley Logistics Park, Oakdale Central, Oakdale South and Horsley Park Employment Precinct. It is also close to other established and emerging employment-generating precincts, including Eastern Creek to the north, Huntingwood to the north-east, Mamre Road to the west and Wetherill Park to the east.

The proposed development also includes a HV connection to provide power to the data centre site as provided in Figure 2. The HV connection extends from the site in the Fairfield LGA, north along Johnston Crescent and Old Wallgrove Road to the TransGrid Sydney West substation which is in the Blacktown LGA.

Figure 2 HV Connection Route



Source: NEXTDC

3. COMMUNITY AND STAKEHOLDER ENGAGEMENT STRATEGY

This section outlines the engagement activities delivered during February and March 2024 to raise community and stakeholder awareness of, and invite feedback on, the proposal. This engagement methodology and its outcomes have been informed by and are consistent with the NSW Department of Planning, Housing and Infrastructure (DPHI's) *Undertaking Engagement Guidelines for State Significant Projects*.

3.1. PURPOSE OF ENGAGEMENT

The community and stakeholder engagement program aimed to:

- Provide accurate information about the proposed concept plans
- Deliver an independent, transparent and accountable consultation process and provide a range of ways for people to engage and give feedback
- Document key feedback to inform ongoing design and planning
- Collate feedback to inform the planning and development of the proposal
- Invite proactive engagement on key community issues and concerns.

3.2. STAKEHOLDERS

Figure 3 below outlines the stakeholders that are included in the SEARs: specifically, local councils, DPHI, relevant agencies, Aboriginal stakeholders, and the community. Based on levels of impact and/or interest, we have separated stakeholders into five categories.

Figure 3 Stakeholder categorisation



3.2.1. DPHI

NEXTDC and Urbis Planning were responsible for engagement with DPHI.

As identified in the SEARs, engagement was required with the relevant Department assessment teams. This included the Planning and Assessment team and the Environment and Heritage team.

3.2.2. Fairfield City Council

NEXTDC and Urbis Planning were responsible for engagement with Fairfield City Council.

As identified in the SEARs, engagement with relevant Councils was required for this project. The data centre site and part of the HV connection is within the Fairfield LGA.

3.2.3. Penrith City Council

Urbis Engagement was responsible for engagement with Penrith City Council.

Although the site does not sit within the Penrith LGA, given its location close to the LGA border, engagement with Penrith City Council was undertaken.

3.2.4. Blacktown City Council

NEXTDC and Urbis Engagement were responsible for engagement with Blacktown City Council.

Although the data centre site does not sit within the Blacktown LGA, given its location close to the LGA border, engagement with Blacktown City Council was undertaken by Urbis.

Separate discussions were held between NEXTDC with Blacktown City Council regarding the HV connection, including obtaining relevant approvals for works within the road reserve.

3.2.5. Relevant agencies

NEXTDC, Urbis Planning and other relevant technical consultants were responsible for engagement with relevant government agencies.

The relevant agencies included Transport for NSW, Transgrid/Lumea, Sydney Water, Endeavour Energy, Jemena, the EPA and the Western Parkland City Authority.

3.2.6. Aboriginal stakeholders

Urbis Heritage was responsible for engagement with Aboriginal stakeholders.

As part of the Aboriginal Cultural Heritage Assessment Report (ACHAR) for the proposal, Urbis Heritage consulted with the Metropolitan Local Aboriginal Land Council and other registered Aboriginal parties as required to determine the cultural significance of objects and/or places on and surrounding the site.

Feedback from this consultation is included in the ACHAR.

3.2.7. Community

Urbis Engagement was responsible for engagement with the community.

As described in DPHI's *Undertaking Engagement Guidelines for State Significant Projects*, the community is anyone (individuals, groups of individuals or organisations) interested in or likely to be affected by the project. Therefore, the community outlined in Figure 3 below was identified due to their proximity to the site and/or likely impact or interest during construction and operation.

For community stakeholders, potential impacts identified included:

- Visual impacts
- Construction and operational impacts, including traffic, noise and air quality
- Opportunities to provide feedback
- Potential impacts to the nearby C2 environmental conservation area and proposed management measures
- Bushfire management measures.

Surrounding landowners and occupiers

Figure 4 shows the site and surrounding community. This includes surrounding landowners and occupiers who may be impacted by construction and operation of the S4 data centre.

Community and representative groups

A thorough search of Council’s website and additional desktop research was undertaken, and no relevant community or representative groups were identified.

Figure 4 The site and surrounding community



- Project site
- Surrounding community

3.3. ENGAGEMENT ACTIVITIES

Engagement activities included a letterbox drop of a community newsletter, a door knock, and enquiry management throughout February 2024.

Table 2 Summary of engagement activities

Engagement activity	Target stakeholder	Reach
Letterbox drop of community newsletter	Surrounding landowners and occupiers	<p>The community newsletter was distributed to 81 properties within the marked area in Figure 3.</p> <p>These included properties on:</p> <ul style="list-style-type: none"> Burley Road Delaware Road Johnston Crescent Walworth Road

Engagement activity	Target stakeholder	Reach
		<p>Wallgrove Road</p> <p>Old Wallgrove Road</p> <p>Horsley Road</p> <p>Arundel Road.</p> <p>The newsletter provided information about the proposal, including any potential impacts to surrounding residences, and invited feedback via the 1800 number or enquiry email. It also included a QR code to the Social Impact Assessment (SIA) survey. A copy of the newsletter is included in Appendix A and a copy of the newsletter distribution area is included in Appendix B of this report.</p>
Door knock	Near neighbours (landowners and occupiers)	<p>Urbis Engagement door knocked 10 residences on Burley Road on 7 February 2024.</p> <p>In cases where a resident was not present or available to speak to the project team, a 'Sorry We Missed You' card was left in the letterbox, along with a copy of the newsletter.</p>
Enquiry management	All stakeholders	To date, five emails and no phone calls have been received from stakeholders and the community.
E-newsletter	Surrounding community stakeholders	<p>An e-newsletter was emailed to the following on 14 February 2024.</p> <p>TAFE NSW – Wetherill Park</p> <p>St. Narsai Assyrian Christian College.</p> <p>Each stakeholder also offered an individual online briefing.</p>

4. ISSUES RAISED

The following table outlines the issues raised by the community and stakeholders and the project response. Key themes that arose during the consultation period included concerns related to:

- The height of the proposed facility and associated privacy impacts for residents
- 24/7 operation of the facility, including light spill and noise impacts
- Changing character of Horsley Park as a result of industrial land uses.

Table 2 Stakeholder matrix

Stakeholder	How this group was consulted	Feedback	Project response
DPHI			
Planning and Assessment Team	<p>NEXTDC and Urbis Planning met with DPHI on 24 March 2022 to discuss the proposal.</p> <p>A follow up meeting with DPHI was held on 31 August 2023 prior to the lodgement of the SEARs request to provide information about the proposal and seek initial feedback.</p> <p>Urbis Planning submitted a SEARs request letter to DPHI for Industry-specific SEARs on 15 October 2023.</p> <p>A preliminary request for a Section 37 amendment was submitted to DPHI on 19 February 2025.</p>	<p>DPHI issued Industry-specific SEARs on 27 October 2023.</p> <p>In response to the feedback received, the SSDA has been updated to incorporate the HV cable route extending from the TransGrid site to the data centre site.</p>	<p>NEXTDC has considered the feedback provided by DPHI's Planning and Assessment Team throughout the preparation of the SSDA.</p> <p>NEXTDC will continue to consult and provide project updates to the Planning and Assessment Team and offer the opportunity to comment and provide feedback on plans.</p>

	<p>Follow up discussions were held with NEXTDC, Urbis Planning and Transgrid/Lumea to resolve the planning approvals pathway for the HV connection, including 14 March 2025 and 10 April 2025.</p> <p>A follow up request was submitted to DPHI on 24 April 2025 seeking confirmation that updated SEARs would not be required and any additional assessment requirements associated with the HV connection.</p>		
Environment and Heritage Team (E&H Branch)	Urbis Planning provided information about the proposal to the Environment and Heritage Branch in February 2024 and issued a Biodiversity Development Assessment Report (BDAR) waiver request.	The Environment and Heritage Branch issued a BDAR waiver on 29 February 2024.	NEXTDC included a biodiversity statement as part of the original EIS. A revised BDAR waiver request is submitted with the Amendment Report for the amended project.
Local Councils			
Fairfield City Council	<p>Planning team</p> <p>Urbis Planning and NEXTDC met with Fairfield City Council on 10 November 2023 to discuss the project.</p>	Council acknowledged the required technical documents outlined in the SEARs issued by NSW DPHI (dated 27 October 2023), and requested the proponent also	<p>Noted.</p> <p>Council's feedback has been addressed and requested assessments have been included in the EIS.</p>

	<p>Civil and structural engineer consultants, Taylor Thomson Witting (TTW), met with Fairfield City Council on 22 November 2023 to discuss the proposal.</p>	<p>address the following matters as part of the EIS package:</p> <ul style="list-style-type: none"> ▪ Compliance with Council's Development Control Plan (DCP) ▪ Potential impacts to amenity for the adjoining rural-residential area ▪ Visual Impact Assessment ▪ Air Quality and Odour Assessment ▪ Noise Impact Assessment ▪ Community Engagement Plan ▪ Environmental Management Plans ▪ Plan of Management ▪ Traffic and Parking Impact Assessment ▪ Landscaping and biodiversity. <p>Council also advised that as part of the EIS, the design must comply with the site specific 327-335 Burley Road, Horsley Park Development Control Plan (DCP) 2016.</p>	<p>Stormwater quantity and quality design has been developed in accordance with the site specific DCP rather than the Fairfield City Council DCP.</p>
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	<p>Social planner</p> <p>Invitation (issued via email on 12 December 2023) to meet with Urbis' Community Planning team to discuss the local community context and potential social impacts of the project, to inform the SIA.</p>	<p>A response to the invitation was received via email on 22 January 2024. Council advised that their Social Planning Team does not currently have capacity to discuss the social impacts for SSDAs; and will provide advice when the SIA is on public exhibition.</p>	<p>Noted.</p>
	<p>NEXTDC</p> <p>Ongoing consultation has been undertaken by NEXTDC with Fairfield City Council regarding the proposed HV connection, including email advice dated 20 March 2025, follow up telephone discussions on 24 March 2025 and additional email advice dated 3 April 2025</p>	<p>Council confirmed they did not have any objections to the works associated within the road reserve to accommodate the required HV connection and provided detailed written advice regarding the relevant requirements to facilitate the work on Council owned land, including obtaining a Utility Works Permit under s138 of the Roads Act 1993.</p>	<p>NEXTDC will continue to engage with Council regarding the proposed works within Johnston Crescent and Old Wallgrove Road to deliver the HV connection, including obtaining necessary approvals.</p>
<p>Blacktown City Council</p>	<p>Social planner</p> <p>Urbis Engagement emailed the Development Assessment Manager on 2 February 2024.</p> <p>This email provided information about the proposal, including ways to provide feedback. The</p>	<p>A reply was received seeking clarification on the proposal. No feedback on the proposal was received.</p>	<p>NEXTDC will continue to inform Blacktown City Council as plans progress.</p>

	community newsletter was attached to the email.		
	<p><u>NEXTDC</u></p> <p>Ongoing consultation has been undertaken by NEXTDC with Blacktown City Council regarding the proposed HV connection, including telephone discussions on 19 March 2025 and a meeting on 25 March 2025.</p>	<p>A meeting was held with Blacktown City Council on 26 March 2025 to discuss the process for obtaining owner’s consent. Council advised that further information on existing services within the proposed HV cable route is required before consent can be considered. The meeting concluded with NEXTDC confirming that additional design work is needed and will be provided to Council once finalised. This design work is currently being progressed in coordination with TransGrid and Lumea.</p>	<p>NEXTDC will continue to engage with Council regarding the proposed works within Old Wallgrove Road to deliver the HV connection, including obtaining necessary approvals.</p>
Penrith City Council	<p>Urbis Engagement emailed the Development Assessment Coordinator on 2 February 2024.</p> <p>This email provided information about the proposal, including ways to provide feedback. The community newsletter was attached to the email.</p>	<p>To date, no response has been received.</p>	<p>NEXTDC will continue to inform Penrith City Council as plans progress.</p>
Relevant agencies			

<p>Transport for NSW (TfNSW)</p>	<p>TTW emailed TfNSW on 18 December 2023 to request Pre-DA advice on the proposal and seek feedback on potential traffic or access impacts. TTW requested information related to the Southern Link Road Corridor Project and offered a pre-development meeting.</p> <p>A meeting was held with TfNSW on 10 April 2025 to discuss the Southern Link Road Corridor.</p>	<p>TfNSW advised that a staged approach to traffic modelling should be taken. They requested that specific traffic modelling scenarios be included in the Traffic Impact Assessment (TIA) and indicated that an Agreement in Principle would be required if the proposal involves the creation of a traffic control signal.</p> <p>TfNSW advised during the preparation of the Amended SSDA that the design for the Southern Link Road had not been progressed beyond the 80% concept design.</p>	<p>TTW has included the requested modelling scenarios in the TIA for the EIS.</p> <p>NEXTDC will continue to engage with TfNSW during the assessment of the Amended SSDA and following the determination of the project.</p>
<p>Sydney Water</p>	<p>NEXTDC applied for a Section 73 Compliance Certificate from Sydney Water in July 2023. This Certificate certifies that there is adequate access to water and wastewater services for the proposal.</p>	<p>Sydney Water advised current planned infrastructure could not accommodate peak load demands for water services.</p> <p>Sydney Water is completing further modelling of the network to evaluate options to enable final capacity of the proposal.</p>	<p>NEXTDC has engaged water and hydraulic specialists, Warren Smith Consulting Engineers (WSce), who will coordinate further engagement with Sydney Water.</p> <p>WSce will work with Sydney Water to develop capacity solutions for the proposal.</p>

<p>Lumea and Transgrid</p>	<p>NEXTDC, Lumea and Transgrid met monthly from February 2022 to February 2024 to discuss the development of the proposal.</p> <p>NEXTDC held specialist meetings regarding commercial and engineering aspects of the proposal between May 2023 and February 2024.</p> <p>Executive leadership meetings between all parties were held in October 2023.</p> <p>Aurecon met with Lumea and Transgrid on 22 November 2023 to discuss the connection models for the S4 power supply.</p> <p>Aurecon continued to meet with Lumea and Transgrid on a fortnightly basis to agree on the proposed substation layout and design.</p> <p>Lumea and Transgrid attended a meeting with DPHI, NEXTDC and Urbis Planning on 10 April 2025 to resolve the planning approvals pathway for the HV connection.</p>	<p>Lumea and Transgrid have issued NEXTDC with Australian Energy Market Operator (AEMO) requirements for 'Large Customers'.</p> <p>Lumea has offered a Designated Network Asset as a potential option to meet capacity requirements.</p> <p>Lumea and Transgrid advised that planning approval was required to be obtained for the HV connection under Part 4 of the Act.</p>	<p>NEXTDC will continue to meet with Transgrid to determine whether to proceed with the Designated Network Asset option offered by Lumea.</p> <p>NEXTDC will continue to meet with Lumea and Transgrid to discuss AEMO Large Customer requirements in line with Customer Performance Standards (CPS).</p> <p>Engagement with Lumea and Transgrid for planning, layout and design is ongoing.</p> <p>The Amended SSSA has been prepared to seek approval for the HV connection.</p>
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EPA	A meeting was held with the EPA on 15 November 2024 to discuss their response to the SSDA submission. NEXTDC outlined data centre operations, clarified that most Scope 2 emissions are customer-driven, and noted the misalignment with current GHG reporting frameworks.	The EPA acknowledged their limited familiarity with data centres and recommended that NEXTDC formally document the information shared to assist in their assessment.	A Greenhouse Gas Emissions Assessment has been prepared to address the EPA advice and respond to their letter dated 3 September 2024. The EPA confirmed that its recommendations are not currently enforceable and will not translate into development conditions or mandatory reporting requirements. However, future SEARs processes may incorporate these guidelines. The plan continues to emphasise the customer-driven nature of NEXTDC's emissions and the inherent challenges in forecasting long-term operational impacts and mitigation.
Jemena (in relation to HV Cable Route)	Engagement with Jemena has commenced via their Project Portal (Job No. 712656).	In their initial response, Jemena has requested additional information regarding the proposed asset crossing and confirmed the need for an Electrical Hazard Assessment in accordance with AS/NZS 4853.	As the design progresses, NEXTDC will continue to engage with Jemena to develop the required Electrical Hazard Assessment (EHA). The cross-sectional design is currently being finalised and will be provided to Jemena by the relevant design team upon completion.

<p>Endeavour Energy (in relation to HV Cable Route)</p>	<p>Initial engagement with Endeavour Energy via email (since 8 April 2025) has not resulted in any further feedback or input to date. A formal application has also been lodged through Endeavour's project portal (ENL6890), where the status remains listed as 'Work in Progress'. As of 7 May 2025, no response has been received. However, no significant project concerns have been identified, as the design is being led by TransGrid/Lumea, who maintain an established working relationship with Endeavour Energy.</p>		<p>The project team will continue to monitor the portal for any further requests or queries from Endeavour Energy. Given that the works are being undertaken by Lumea/TransGrid, there is a high level of confidence that the evolving design will be able to meet Endeavour Energy's requirements.</p>
<p>Western Parkland City Authority</p>	<p>Urbis Engagement emailed the Western Parkland City Authority on 14 March 2024.</p> <p>This email provided information about the proposal along with the community newsletter.</p>	<p>To date, no response has been received from the Western Parkland City Authority.</p>	<p>NEXTDC will continue to inform the Western Parkland City Authority as plans progress.</p>
<p>Fire and Rescue NSW (FRNSW), including the:</p> <p>Special Hazards Unit</p> <p>Fire Safety Unit.</p>	<p>Fire engineering consultants, CORE Engineering, met with FRNSW on 30 January 2024.</p>	<p>FRNSW advised that a Fire Safety Study report should be prepared and included in the EIS, as well as a Fire Engineering Brief Questionnaire (FEBQ).</p>	<p>A Fire Safety Study report has been prepared and is included in the EIS.</p> <p>Once the Fire Safety Study has been reviewed by DPHI as part of the SSDA, NEXTDC will prepare a FEBQ for FRNSW.</p>

Aboriginal stakeholders			
Deerubbin Local Aboriginal Land Council (DLALC)	As part of the Aboriginal Cultural Heritage Assessment Report (ACHAR) for the project, Urbis Heritage consulted the DLALC as required to determine the cultural significance of objects and/or places on and surrounding the site.	To date, no responses have been received from the DLALC.	<p>Further details about consultation with DLALC are provided in the ACHAR.</p> <p>NEXTDC used the ACHAR to inform the proposal's approach and understand the potential impacts affecting this community.</p> <p>Urbis Heritage and NEXTDC will continue to engage and provide project updates to the DLALC, offering the opportunity to comment and provide feedback should the proposal change.</p>
Registered Aboriginal Parties (RAPs)	<p>As part of the ACHAR, Urbis Heritage consulted the RAPs as required to determine the cultural significance of objects and/or places on and surrounding the site.</p> <p>A total of 24 RAPs registered for the project. One RAPs engaged with the process closely and was invited to attend a site inspection on 1 February 2024.</p>	<p>It was established that there are no Native Title claimants or Indigenous Land Use Agreements associated with the subject area.</p> <p>The consultation process identified that the subject area has social and cultural value for the Aboriginal community due to its connection to the broader landscape around the subject area, particularly around waterways.</p>	<p>The ACHAR established that there is very low potential for Aboriginal objects and/or sites within the subject area due to high levels of historical disturbance.</p> <p>Further details about the consultation process, feedback from the RAPs and the project response are provided in the ACHAR.</p> <p>NEXTDC used the ACHAR to inform the proposal's approach and</p>

		The ACHAR methodology and recommendations have been generally endorsed by all parties.	<p>understand the potential impacts affecting this community.</p> <p>Urbis Heritage and NEXTDC will continue to engage and provide project updates to the RAPs, offering the opportunity to comment and provide feedback should the proposal change.</p>
Community			
<p>Residents and businesses on streets bounded by:</p> <p>Burley Road</p> <p>Delaware Road</p> <p>Johnston Crescent</p> <p>Walworth Road</p> <p>Wallgrove Road</p> <p>Old Wallgrove Road</p> <p>Horsley Road</p> <p>Arundel Road.</p>	<p>A community newsletter was distributed on 2 February 2024 to 81 residences and businesses in the Horsley Park area. The newsletter provided information about the proposal, including any potential impacts to surrounding residences, and invited feedback via the 1800 number or enquiry email.</p> <p>The newsletter can be found in Appendix A, and the newsletter distribution area can be found in Appendix B.</p> <p>Urbis Engagement also conducted a door knock of the site's ten closest residential neighbours</p>	<p>Visual impacts</p> <p>One neighbour expressed concern related to the proximity of the site to residential neighbours, and in particular, concern about potential visual impacts due to building height and light spill due to 24/7 operation of the facility. The resident requested further clarification around the height of the proposal, including whether any of the storeys would be built underground to mitigate potential visual impacts, and expressed concern about privacy.</p>	<p>The height of the proposal is within the permissible limits.</p> <p>Potential visual impacts resulting from construction and operation of the proposed facility have been addressed in the EIS.</p> <p>Should the proposal be approved, an Operational Management Plan will be prepared, and will outline how NEXTDC will manage the site whilst minimising potential operational impacts. NEXTDC does not expect any impacts due to light spill.</p> <p>Building setbacks and landscaping buffers have been included in the design to reduce potential visual and privacy impacts.</p>

	<p>along Burley Road on 7 February 2024.</p> <p>Seven neighbours were engaged during this door knock. For the residences with nobody home, Urbis Engagement left a copy of the newsletter along with a 'Sorry We Missed You' slip.</p> <p>Community enquiries were received and managed via the dedicated email and 1800 phone number throughout the entire consultation period.</p>	<p>Changing character and environmental concerns</p> <p>Several residents expressed concern about the perceived ongoing changing character of Horsley Park. Many long-term residents expressed having seen the area change because of industrial land uses and were particularly concerned about the loss of local flora and fauna due to development in the area.</p> <p>One resident suggested that NEXTDC should consider including houses or parks in their plans to increase amenity and create habitats for displaced flora and fauna.</p>	<p>The site slopes downwards from the south-east to the north-west corner, with a fall of approximately 10 metres. The proposal design incorporates the topography of the site, further reducing the visual impact to residential neighbours on Burley Road.</p> <p>The proposal site is zoned for industrial purposes, which permits developments such as data centres, industrial manufacturing sites, factories and warehouses.</p> <p>There are currently no plans to include residential or recreational spaces like parks in the proposal.</p> <p>NEXTDC has included a biodiversity statement as part of the EIS.</p>
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	<p>Noise impacts</p> <p>Several residents expressed concern related to potential noise impacts, indicating compounding effects due to noise associated with the operation of existing industrial warehouses.</p>	<p>An assessment of potential noise impacts related to the construction and operation of the proposed data centre has been included in the EIS.</p> <p>Should the proposal be approved, an Operational Management Plan will be prepared, and will outline how NEXTDC will manage the site whilst minimising potential operational impacts.</p>
	<p>Consultation</p> <p>Several residents expressed frustration about the extent to which public feedback will be considered as part of the planning process for the proposal. Many residents pointed to a recent project on Burley Road, stating that it was approved despite strong community opposition.</p> <p>Residents also expressed frustration around their views failing to be captured in the planning and delivery of the development in this area, stating that in previous experiences they have tried to speak to somebody to raise their</p>	<p>NEXTDC will continue to keep stakeholders and the community informed of the project approval process through the exhibition and determination phases by:</p> <p>Continuing to engage with the community about the project, its potential impacts, and the approval process including opportunities to provide feedback</p> <p>Enabling the community to seek information about the project through the two-way communication channels.</p>

	<p>concerns and have not felt heard or considered.</p>	
	<p>Traffic</p> <p>One resident expressed concern related to the existing traffic conditions around the site, and particularly the safety of surrounding laneways given the number of heavy vehicles travelling along Burley Road. This resident indicated that the closure of one section of Burley Road had recently exacerbated this issue.</p>	<p>An assessment of the potential traffic impacts has been submitted as part of the EIS, including the expected number of vehicle movements generated by the proposed development.</p> <p>The proposed development is projected to generate up to 260 vehicle trips in the morning and afternoon peak hours, once operating at full capacity. This is expected to have minimal impact on the local road network due to:</p> <ul style="list-style-type: none"> Parking availability on-site Site access provided with satisfactory queueing space Adjacent road networks which have capacity for expected demands.
	<p>Other</p> <p>One resident noted that there was a need for new infrastructure in the area.</p>	<p>Noted.</p>

<p>TAFE NSW – Wetherill Park</p>	<p>Urbis Engagement emailed the Wetherill Park campus on 14 February 2024.</p> <p>This email provided information about the proposal along with the community newsletter and offer of a one-on-one briefing.</p>	<p>To date, no response has been received from TAFE NSW.</p>	<p>NEXTDC will continue to inform TAFE NSW – Wetherill Park as plans progress.</p>
<p>St. Narsai Assyrian Christian College</p>	<p>Urbis Engagement emailed St. Narsai Assyrian College on 14 February 2024.</p> <p>This email provided information about the proposal along with the community newsletter and offer of a one-on-one briefing.</p>	<p>To date, no response has been received from St. Narsai Assyrian Christian College.</p>	<p>NEXTDC will continue to inform St. Narsai Assyrian Christian College as plans progress.</p>

5. FUTURE COMMUNITY AND STAKEHOLDER ENGAGEMENT

NEXTDC will continue to keep stakeholders and the community informed of the project approval process through the exhibition and determination phases by:

- Continuing to engage with the community about the project, its potential impacts, and the approval process
- Enabling the community to seek clarification about the project through the two-way communication channels.

6. DISCLAIMER

This report is dated 12 May 2025 and incorporates information and events up to that date only and excludes any information arising, or event occurring, after that date which may affect the validity of Urbis Ltd (**Urbis**) opinion in this report. Urbis prepared this report on the instructions, and for the benefit only, of NEXTDC (**Instructing Party**) for the purpose of Community and Stakeholder Engagement Outcomes Report (**Purpose**) and not for any other purpose or use. To the extent permitted by applicable law, Urbis expressly disclaims all liability, whether direct or indirect, to the Instructing Party which relies or purports to rely on this report for any purpose other than the Purpose, and to any other person which relies or purports to rely on this report for any purpose whatsoever (including the Purpose).

In preparing this report, Urbis was required to make judgements which may be affected by unforeseen future events, the likelihood and effects of which are not capable of precise assessment.

All surveys, forecasts, projections and recommendations contained in or associated with this report are made in good faith and on the basis of information supplied to Urbis at the date of this report, and upon which Urbis relied. Achievement of the projections and budgets set out in this report will depend, among other things, on the actions of others over which Urbis has no control.

In preparing this report, Urbis may rely on or refer to documents in a language other than English, which Urbis may arrange to be translated. Urbis is not responsible for the accuracy or completeness of such translations and disclaims any liability for any statement or opinion made in this report being inaccurate or incomplete arising from such translations.

Whilst Urbis has made all reasonable inquiries it believes necessary in preparing this report, it is not responsible for determining the completeness or accuracy of information provided to it. Urbis (including its officers and personnel) is not liable for any errors or omissions, including in information provided by the Instructing Party or another person or upon which Urbis relies, provided that such errors or omissions are not made by Urbis recklessly or in bad faith.

This report has been prepared with due care and diligence by Urbis and the statements and opinions given by Urbis in this report are given in good faith and in the reasonable belief that they are correct and not misleading, subject to the limitations above.

APPENDIX A COMMUNITY NEWSLETTER

Figure 5 Community newsletter



New Data Centre proposal: Johnston Crescent, Horsley Park

February 2024

Artist impression of the proposed site (view from Johnston Crescent) – indicative only.

NEXTDC is proposing a new data centre in Horsley Park, called S4 Sydney.

This newsletter provides an overview of the proposal and next steps, including how you can provide feedback and find out more information.

What is a data centre?

Data centres are buildings that organisations use to securely house their information, data, hardware, and critical applications.

As technology increasingly transitions into the cloud, there is a growing need for local data storage.

More local data infrastructure will provide faster, more secure connections for organisations.

What is being proposed?

NEXTDC is proposing to construct and operate a new data centre at Johnston Crescent, Horsley Park. The proposal includes:

- Five hyperscale buildings, each up to 38 metres high, housing the digital technology infrastructure for NEXTDC's clients.
- One enterprise building, up to 32 metres high, housing several mixed retail and commercial tenants, commercial and office space, and a lobby.

Vehicle access to the proposed data centre will be via Johnston Crescent, and on-site car parking has been included in the proposal.

If approved, the site would operate on a 24-hour, 7-day-per-week basis. The proposal would also create around 250-300 new full-time jobs during construction, and around 160 new ongoing full-time jobs as part of the site's operation.

Delivering the S4 Sydney data centre at Horsley Park means:

- A new secure location for the storage of data and critical digital infrastructure within the Sydney basin
- Increased speed of digital access to clients and cloud platforms in Sydney and across NSW
- Better security of sensitive data
- An additional location for the backup and redundancy of data stored elsewhere across NSW





Managing potential impacts

NEXTDC is committed to understanding and managing potential impacts during construction and operation of the proposed data centre.

The project team is preparing an Environmental Impact Statement (EIS) which will assess potential impacts and suggest mitigation measures. This will include a Bushfire Risk Management Plan and an Environment Management Plan to minimise potential impacts to the natural bushland zoned C2 Environmental Conservation; as well as assessments of potential traffic, noise, dust, overshadowing and visual impacts.

Should the proposal be approved, NEXTDC will develop and implement an Operational Management Plan which will outline how NEXTDC will manage the site, including ensuring potential operational impacts on our neighbours are minimised.

Next steps

NEXTDC is seeking approval for their S4 Sydney data centre proposal from the NSW Department of Planning, Housing and Infrastructure (DPHI) through the State Significant Development Application (SSDA) process.

WE ARE HERE

The next step is to prepare an EIS. As part of preparing the EIS, NEXTDC is engaging with its neighbours and the community.

FEBRUARY 2024

Community feedback will be collated in a Consultation Outcomes Report and included in the submission to DPHI to inform future planning.

MARCH 2024

Formal SSDA lodgement. Following this, DPHI will publicly exhibit the proposal. At this point, the community can make formal submissions to DPHI.

FOLLOWING 12 MONTHS

NEXTDC is expecting a determination within 12 months of lodging the SSDA.

Provide your feedback

NEXTDC has commissioned Urbis Engagement to collect your feedback and provide further information about the S4 Sydney data centre proposal. Provide your feedback by contacting the team via:



engagement@urbis.com.au

1800 244 863

Urbis is also preparing a **Social Impact Assessment (SIA)** as part of the SSDA. To inform the SIA, we are seeking feedback from the community to better understand the needs of the local area and potential social impacts and benefits of the proposal.

You can provide your feedback response by filling in a short online survey. The survey is open until 5pm on **18 February 2024**.

Scan the QR code with your phone or access the survey here:

urbis.questionpro.com.au/NEXTDCS4

NEXTDC will consider all feedback received as the design of the proposal is finalised.



About NEXTDC

NEXTDC is an ASX 100-listed technology company focusing on data centre outsourcing solutions, connectivity services and infrastructure management software.

They are Australia's largest locally owned and operated data centre provider, providing organisations with the most direct access to the leading public cloud platforms, networks, and IT services infrastructure.

NEXTDC currently operates three data centres in Sydney; two in Macquarie Park (S1 Sydney and S2 Sydney) and one in Artarmon (S3 Sydney). With a focus on sustainability and renewable energy, NEXTDC delivers solutions that prioritise energy efficiency.



APPENDIX B NEWSLETTER DISTRIBUTION AREA

Figure 6 Newsletter distribution map





Rohan Makkar

From: Sunnee Cullen <SCullen@fairfieldcity.nsw.gov.au>
Sent: Friday, 19 December 2025 9:44 AM
To: Rohan Makkar
Cc: Patrick Jones; Christopher Croucamp
Subject: RE: Lot 306 - 16 Johnston Cres Horsley Park - MPX Site Accom

Dear Rohan,

Thank you for our meeting yesterday with your planning consultants Christopher Croucamp and Patrick Jones in attendance.

As discussed, the issue of permissibility will need to be further explored given the zoning of the site and nature of temporary use proposed. It was indicated that this should be investigated first and foremost before proceeding further, and any further information you can provide to Council would assist with this matter.

As discussed, the preliminary information that was provided on 15 December 2025 has been forwarded to the relevant technical officers. As Council will be closed from today (19 December 2025), Council's technical officers will review the submitted information in the new year and feedback will be provided to you once completed.

In relation to the hoarding request, this has been forwarded to Council's Assets team who will advise on the steps in progressing your request.

As discussed, I will be on leave until Monday 19 January 2025. If you require anything further, please let me know. Will be in contact when I return.

Kind regards,
Sunnee.

Sunnee Cullen

Manager Development Planning | Development Planning
City Development Directorate

02 9725 0256 | 0407 437 667 | scullen@fairfieldcity.nsw.gov.au

Customer Service: 02 9725 0222 | PO Box 21 Fairfield NSW 1860

www.fairfieldcity.nsw.gov.au

mail@fairfieldcity.nsw.gov.au



We acknowledge the Cabrogal of the Darug nation who are the Traditional Custodians of this Land. We also pay our respect to the Elders both past, present and emerging of the Darug Nation.

Fairfield City's new green bin is coming and your red bin is staying the same!

Find out more: www.fairfieldcity.nsw.gov.au/waste

FOGO
FOOD ORGANICS
GARDEN ORGANICS
Service starts in
June 2024.

DO THE RIGHT THING USE THE RIGHT BIN

From: Rohan Makkar <Rohan.Makkar@multiplex.global>
Sent: Monday, 15 December 2025 5:10 PM
To: Sunnee Cullen <SCullen@fairfieldcity.nsw.gov.au>
Cc: Patrick Jones <pjones@urbis.com.au>; Christopher Croucamp <ccroucamp@urbis.com.au>
Subject: Lot 306 - 16 Johnston Cres Horsley Park - MPX Site Accom

You don't often get email from rohan.makkar@multiplex.global. [Learn why this is important](#)

Hi Sunnee,

Thank you for your time over the phone. As discussed, see attached our site plan for the temporary site accommodation on Lot 306, Johnstone Crescent, Horsley Park. The site accommodation is for the works on Lot 305 which is currently pending SSDA approval (excepted imminently).

Our planner Urbis have submitted a pre-DA meeting request attached. Any preliminary feedback on the submission would be much appreciated.

We will have 100 workers on site initially and at the peak, we will have approx. 2000 workers on site – with the peak occurring approx. 1 year into construction. We are looking to hire out an empty lot for additional parking.

Construction Duration is Jan 2026 – End of 2027.

While we wait for the DA for the main site accommodation, we want to establish a B-class hoarding on Johnston Crescent with site sheds on top of it, for the initial workforce and build an additional driveway for access. Both plans attached.

Please let me know when you can meet online to discuss further. Thanks,

Regards,

Rohan Makkar
Design Manager

MULTIPLEX

Multiplex Australasia
M: +61 (0) 439 778 338

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Appendix B – Overall Site Plan

FLIP BOOK

MONTH 1

Decommission and
relocate basin



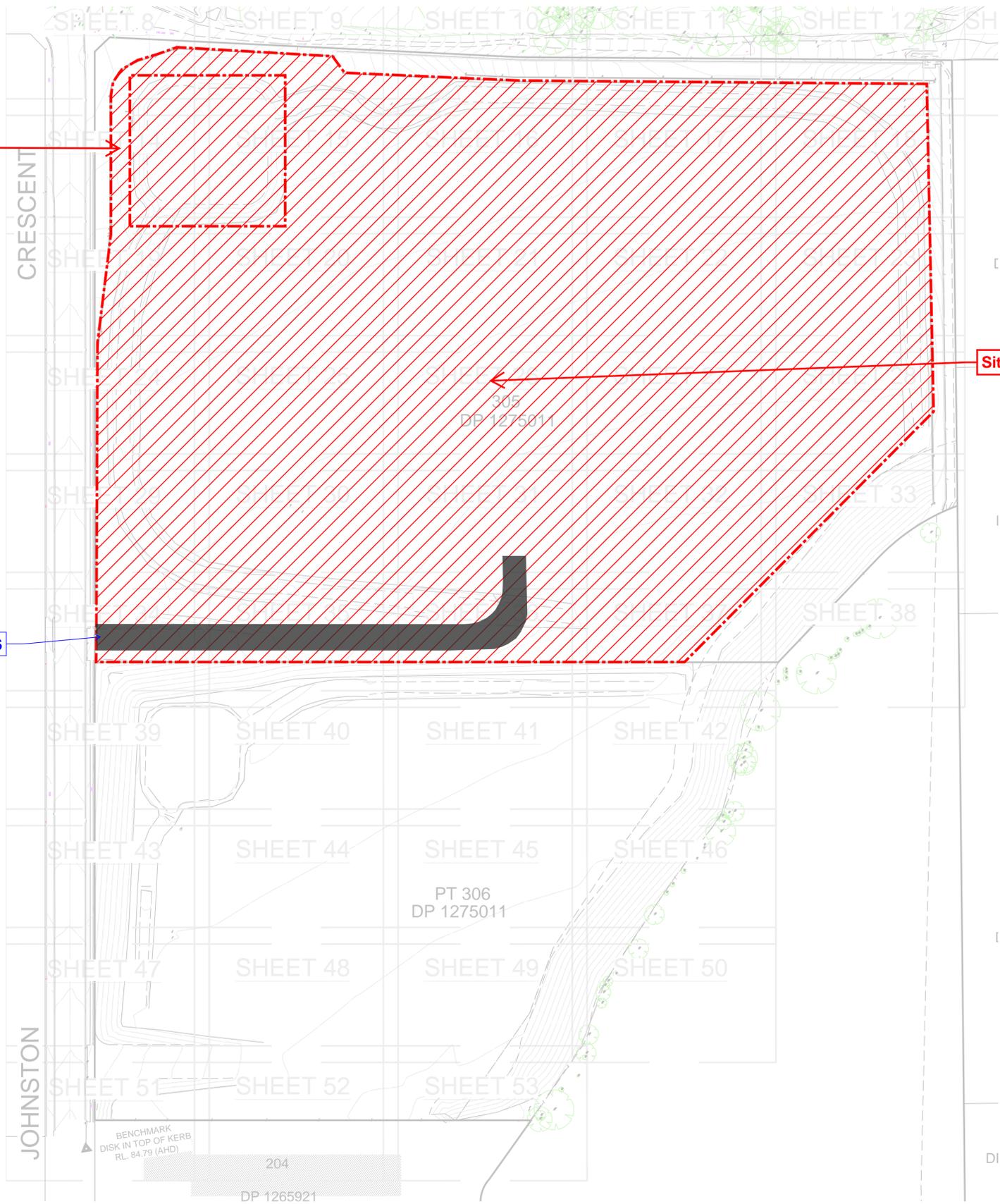
FLIP BOOK

MONTH 2

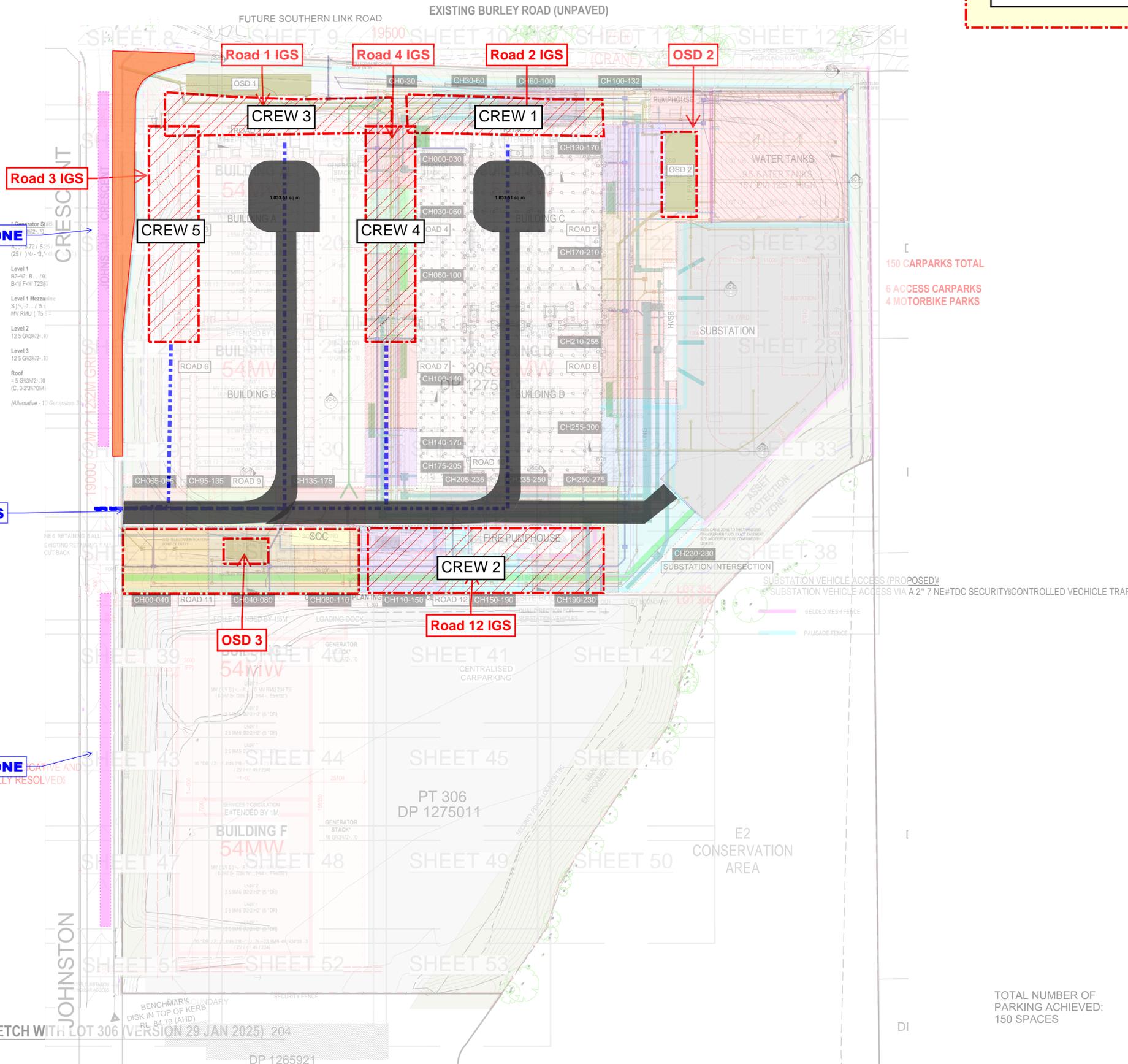
Decommission and
relocate basin

Site Wide Bulk Ex

EXISTING ACCESS



TEMP ROAD SURFACE INSTALLED



LOADING ZONE

ALTERNATE ROAD 9 ACCESS

NOTE: WORK ZONE (NEGATIVE AND NOT FULLY RESOLVED)

150 CARPARKS TOTAL
6 ACCESS CARPARKS
4 MOTORBIKE PARKS

1 MASTERPLAN SKETCH WITH LOT 306 (VERSION 29 JAN 2025) 204

1 : 1000

DP 1265921

NO. 100105	REV. 01	FOR INFORMATION	19	44	BF
NO. 200105	REV. 01	FOR INFORMATION	19	44	BF
DATE	NO.	REVISION HISTORY	YR	MO	DA
					DRW/CHK/OA

PRINCIPAL CONSULTANTS

Architect HDR
 Services Aurecon
 Structural TTW

PRINCIPAL CONTRACTOR

CLIENT



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 NEXTDC
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 Brisbane QLD 4001
 T: +61 7 3177 4777

PROJECT ARCHITECT



HDR
 HDR
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 Sydney NSW 2000
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Document Author Project Number
 10335877

Key Plan



Site: S* Stage: 0101 NEXTDC Project Number: 10115177

Project Address:
 16 JOHNSTON CRESCENT,
 HORSELY PARK, NSW 2175.

Project Name:
 NEXTDC Shiraz 4

Drawing Title:
 MASTER PLAN SKETCH WITH LOT
 306 (VERSION 29 JAN 2025)

Drawing Status:
 SKETCH

Drawn: YP Date: 30.01.25
 CHK: AH Date: 30.01.25

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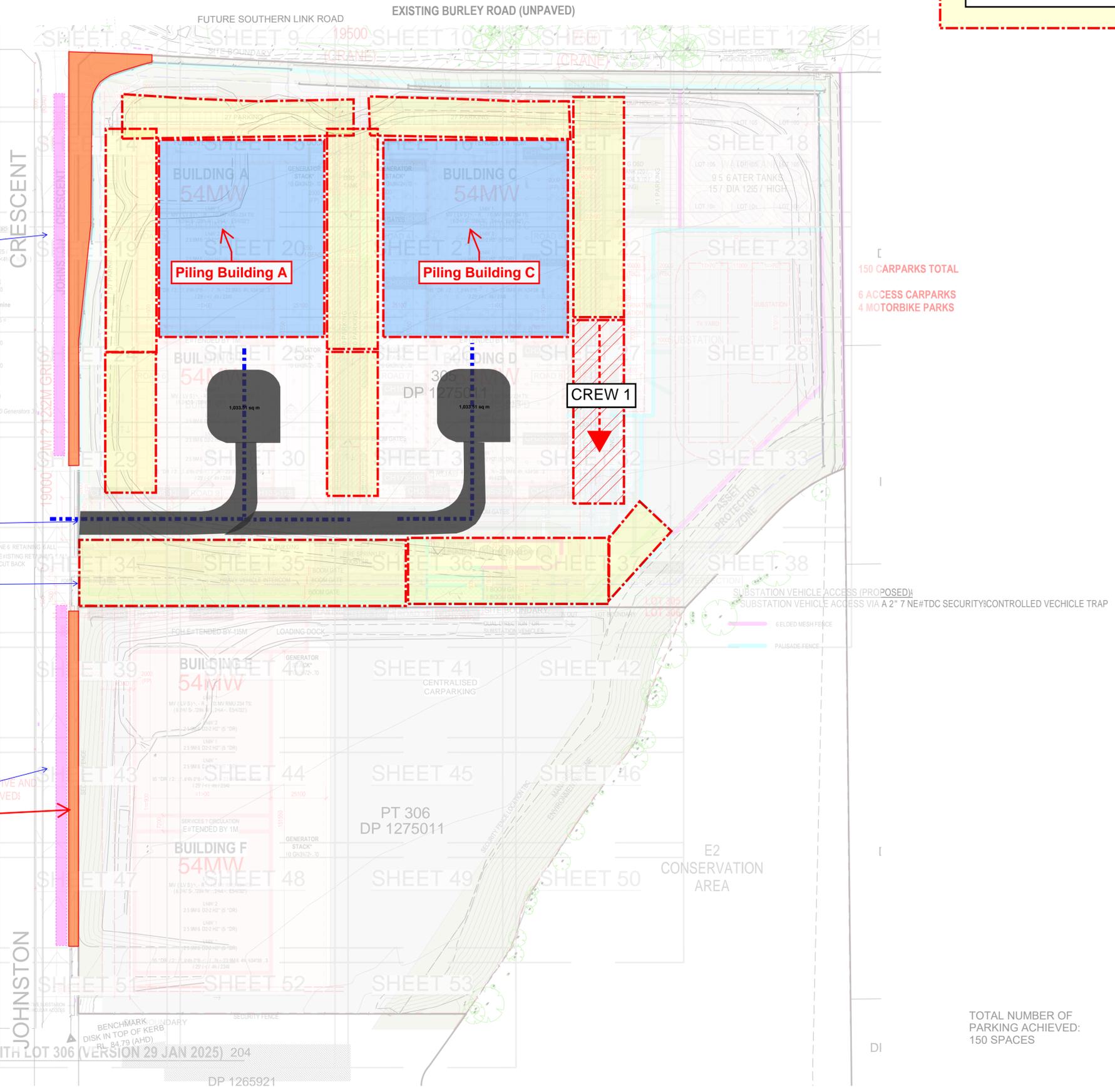
FLIP BOOK

MONTH 6

FUTURE SOUTHERN LINK ROAD

WORK IN PROGRESS

TEMP ROAD SURFACE INSTALLED



LOADING ZONE

Piling Building A

Piling Building C

CREW 1

ALTERNATE ROAD 9 ACCESS

PERMANENT ROAD ACCESS

NOTE: WORK ZONE NOT FULLY RESOLVED!

Site Establishment Works (B-Class)

150 CARPARKS TOTAL
6 ACCESS CARPARKS
4 MOTORBIKE PARKS

TOTAL NUMBER OF PARKING ACHIEVED: 150 SPACES

1 MASTERPLAN SKETCH WITH LOT 306 (VERSION 29 JAN 2025) 204
1:1000

NO.	DATE	BY	FOR INFORMATION	REVISED	DATE	NO.	DATE	BY	FOR INFORMATION	REVISED	DATE	NO.	DATE	BY	FOR INFORMATION	REVISED	DATE	
1																		

PRINCIPAL CONSULTANTS

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Services Aurecon

Structural TTW

PRINCIPAL CONTRACTOR

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Melbourne VIC 3000
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Document Author Project Number
10335877



Site:	S*	Stage:	0101	NEXTDC Project Number:	10115777
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Project Address:
16 JOHNSTON CRESCENT,
HORSELY PARK, NSW 2175.

Project Name:
NEXTDC Shiraz 4

Drawing title:
MASTER PLAN SKETCH WITH LOT
306 (VERSION 29 JAN 2025)

Drawing Status:
SKETCH

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CHK	AH	Date	30.01.25

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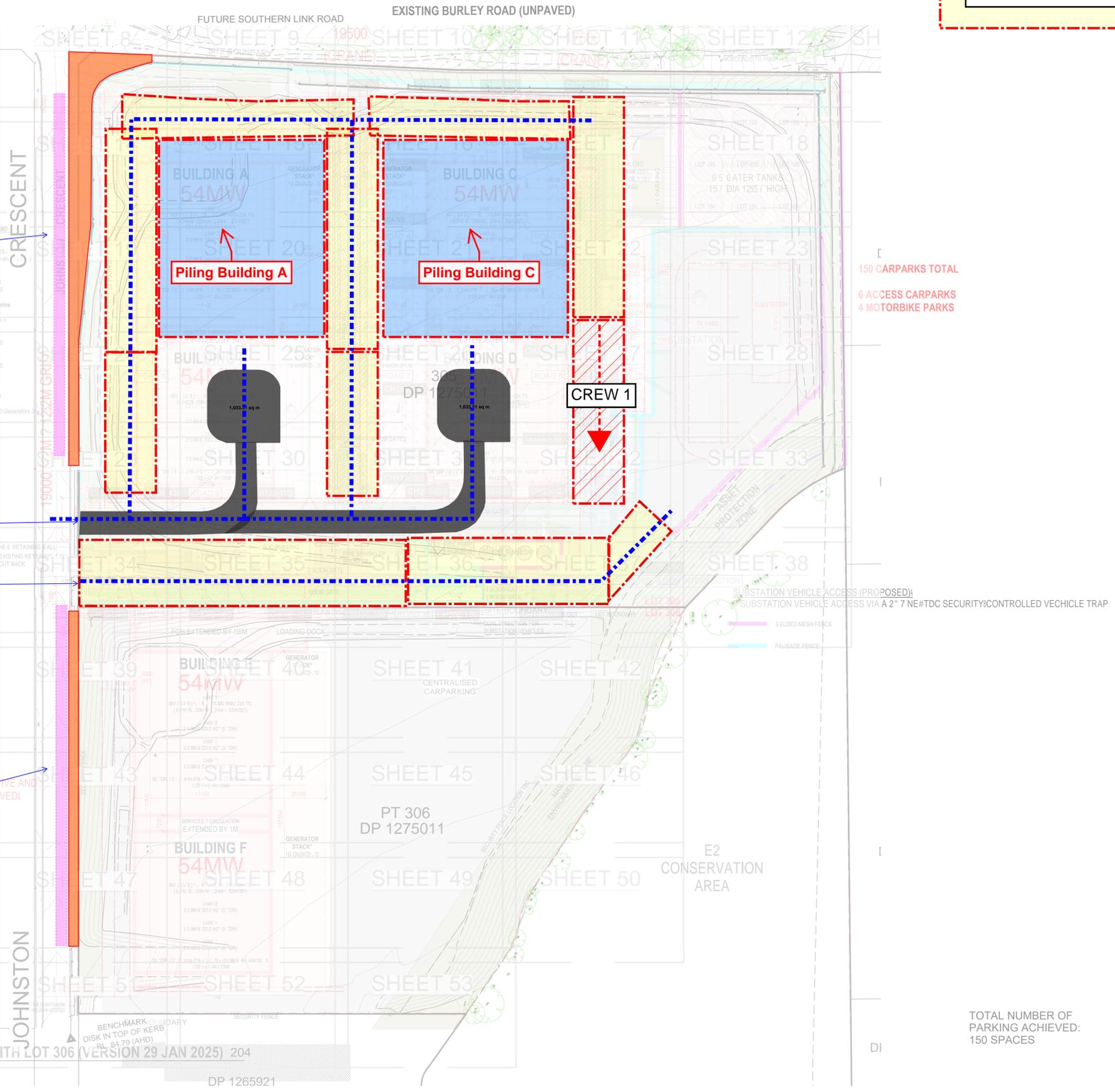
FLIP BOOK

MONTH 7

FUTURE SOUTHERN LINK ROAD

WORK IN PROGRESS

TEMP ROAD SURFACE INSTALLED



LOADING ZONE

Piling Building A

Piling Building C

CREW 1

ALTERNATE ROAD 9 ACCESS

PERMANENT ROAD ACCESS

NOTE: WORK ZONE (NEGATIVE AND NOT FULLY RESOLVED)

150 CARPARKS TOTAL
6 ACCESS CARPARKS
4 MOTORBIKE PARKS

TOTAL NUMBER OF PARKING ACHIEVED: 150 SPACES

1 MASTERPLAN SKETCH WITH LOT 306 (VERSION 29 JAN 2025) 204
1:1000

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1					

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Services Aurecon
Structural TTW

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Document Author Project Number
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Key Plan

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HORSELY PARK, NSW 2175.

Project Name:
NEXTDC Shiraz 4

Drawing title:
MASTER PLAN SKETCH WITH LOT
306 (VERSION 29 JAN 2025)

Drawing Status:
SKETCH

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CHK	AH	Date	30.01.25

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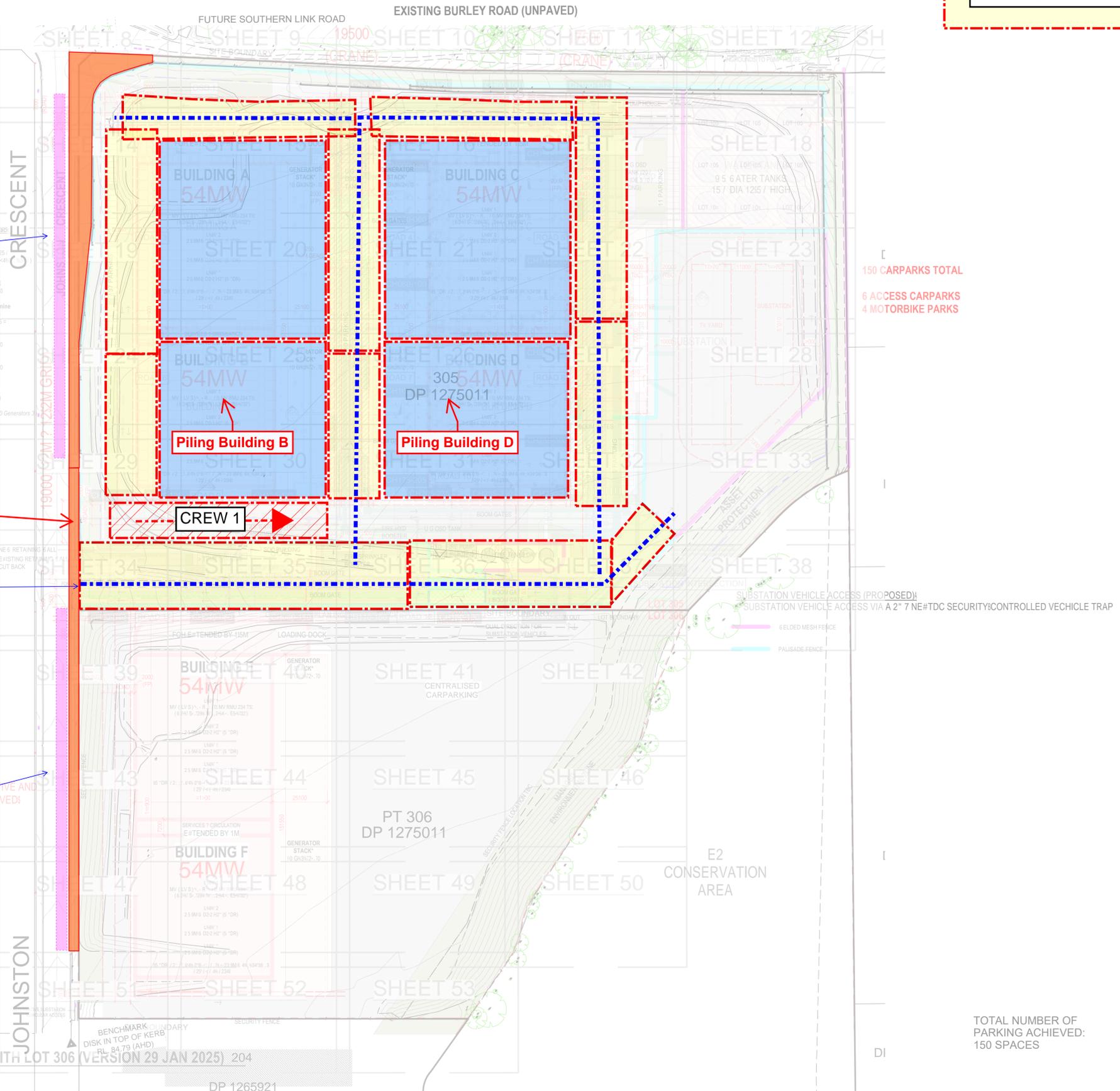
FLIP BOOK

MONTH 8

FUTURE SOUTHERN LINK ROAD

WORK IN PROGRESS

TEMP ROAD SURFACE INSTALLED



LOADING ZONE

Site Establishment Works (B-Class)

PERMANENT ROAD ACCESS

NOTE: WORK ZONE (NEGATIVE AND NOT FULLY RESOLVED)

150 CARPARKS TOTAL
6 ACCESS CARPARKS
4 MOTORBIKE PARKS

TOTAL NUMBER OF PARKING ACHIEVED: 150 SPACES

1 MASTERPLAN SKETCH WITH LOT 306 (VERSION 29 JAN 2025) 204
1:1000

NO. 100125	REV. 1	FOR INFORMATION	19	44	BF
NO. 200125	REV. 2	FOR INFORMATION	19	44	BF
DATE	NO.	REVISION HISTORY	19	44	BF
			DRW	CHK	QA

PRINCIPAL CONSULTANTS	
Architect	HDR
Services	Aurecon
Structural	TTW
PRINCIPAL CONTRACTOR	
CLIENT	
 NEXTDC NEXTDC GPO Box 3219 Brisbane QLD 4001 T: +61 7 3177 4777	
PROJECT ARCHITECT	
 HDR HDR ARCHITECTS 117 Foveaux Street, Brisbane QLD 4000 T: +61 7 3177 4777	
Nominated Architects NSW: Cole Chandler 15736, D. Joe Mitchell 8899, Mark Gray 7296, Simon Flett 6393 VIC: Cole Chandler 15211 ACT: Cole Chandler 2767 TAS: Cole Chandler 1479 LD: Cole Chandler 6139	
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Document Author	Project Number
10335877	
Key Plan	
Site:	Stage:
S*	0101
NEXTDC Project Number:	
10115777	
Project Address:	
16 JOHNSTON CRESCENT, HORSELY PARK, NSW 2175.	
Project Name:	
NEXTDC Shiraz 4	
Drawing Title:	
MASTER PLAN SKETCH WITH LOT 306 (VERSION 29 JAN 2025)	
Drawing Status:	
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Drawn	Date
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CHK	Date
AH	30.01.25
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Drawing Number	
S4-ARC-HDR-DRG-A-SK072	
Rev	
IF12	

Appendix C – CVs



Ammar Ahmed

Engineer, Traffic

BEng (Hons) in Civil Engineering

ammar.ahmed@ttw.com.au

Experience

2022 - Current
Traffic Engineer, TTW

During his tenure at TTW, Ammar has actively participated in numerous traffic engineering projects spanning diverse sectors, including education, health, commercial ventures, art facilities and community initiatives.

His expertise extends to the design development of car parks and various traffic elements, encompassing traffic data analysis, loading docks, and pick-up and drop-off bays. This proficiency extends to addressing intricate and project-specific requirements.

Ammar possesses valuable experience in preparing comprehensive traffic impact assessments, construction traffic management plans, school transport plans, and green travel plans across a variety of projects types, notably in the domains of schools, hospitals, and community facilities. His knowledge extends to intersection modelling and traffic data analysis, and he is proficient in utilising various software programs, including AutoTURN, AutoCAD and SIDRA

Education

UNE Tamworth Campus
Brigidne College
St Vincent's College
University of Sydney
Jerrabomberra HS stage 2
Wee Waa HS
Meriden School

Health

Bathurst Hospital

Residential + Accommodation

Wahroonga Estate Stage 3
Boarding House Project for Loreto

Commercial

NEXTDC 54 Data Centre

Community + Public

Uniting Edinglassie
Mt Druitt Hub
Barangaroo Cutaway Fitout



Sophie Slade

Senior Traffic Engineer

B.Eng (Civil), MIEAust, Road Safety Auditor (Level 1)

sophie.slade@ttw.com.au

Experience

2023 – Current
Senior Traffic Engineer, TTW

2022 – 2023
Senior Traffic Engineer, Stanbury Traffic Planning

2020 – 2022
Traffic Engineer, Stanbury Traffic Planning

Sophie is a highly motivated and ambitious traffic engineer with four years' experience working on various projects throughout New South Wales.

Sophie has assessed the parking and traffic impacts of a range of land use projects on the greater road network. She has formed part of many successful project teams to bring forth safe, efficient and sustainable development.

Sophie is an accredited Road Safety Auditor (Level 1) and has attained the SafeWork NSW – Work Health & Safety Prepare Work Zone and Traffic Management Plans (PWZ TMP) qualification. She is also proficient in relevant engineering tools such as SIDRA traffic modelling, Auto CAD and AutoTurn.

Mixed Development

27 Yattenden Crescent, Baulkham Hills
388 Lane Cove Road, Macquarie Park
Arncliffe Central
1 Bilambee Avenue, Bilgola Plateau
Lidcombe Rise

Industrial

30 Loftus Road, Yennora
Thornleigh Community Recycling Centre

Education

St Agnes Catholic High School
Redlands Preparatory School
Regents Park Christian School
International Chinese School

Masterplanning

Mount Druitt Town Centre Revitalisation

Health + Aged Care

Somerset Private Hospital

Sports + Recreation

Sawtell Bowling Club
Wests Illawarra RSL
Earlwood Bardwell Park RSL
Club Singleton

Child Care Centre

35D Sefton Road, Thornleigh
1458 Pacific Highway, Turramurra
129 & 133 Ninth Avenue, Belfield



Grace Carpp

Associate

BE(Hons) Road Safety Auditor (Level 1)

grace.carpp@ttw.com.au

Experience

2021 – Current
Associate, TTW

2019 – Current
Senior Traffic and Civil Engineer, TTW

2015 – 2019
Traffic and Civil Engineer, TTW

Grace is part of TTW's Senior Management team and is experienced in both civil and traffic engineering as well as Road Safety Auditing, leading to solutions that are integrated and consider user safety in all aspects of design. Her experience extends across a number of sectors and regions with a particular focus on Education and Health projects. With a focus on project planning, Grace works collaboratively with the consultant design team to establish key design criteria early in the project planning process prior to these becoming critical items.

Hospitals

Cowra Hospital Redevelopment
Bathurst Hospital Redevelopment
Hornsby Ku-ring-gai Hospital Redevelopment
Lismore Base Hospital
Goulburn Hospital and Health Services Redevelopment
Bulli Aged Care Centre of Excellence
Campbelltown Hospital Multi Storey Car Park
Wyong Hospital

Aged Care

Uniting Edinglassie ILU and RACF
Schofields Age Exclusive Village
Uniting Epping ILU and RACF
Sir Moses Montefioe Jewish Home
Opal Fernleigh

Schools

St Vincents College
Meriden School
Edmondson Park High School
Brigidine College
Oxford Falls Grammar School
Knox Preparatory School
Wee Waa High School
St Catherines School
Murrumbidgee School
Willoughby Public School
Willoughby Girls High School
Russell Lea Infants School
Loreto Normanurst Early Learning Centre
Ravenswood
Barker College Master Plan

Arts & Culture

Australian Museum Master Plan
Museum of Applied Arts and Sciences
Western Sydney Performing Arts Centre
Mosman Civic Centre

Public Infrastructure

Macquarie Park Innovation Precinct
Edmondson Park North and South
Commuter Car Parks
Leppington Commuter Car Park
Bondi Surf Bathers Life Saving Club
Brookvale Oval
City of Sydney Small Parks
Wombeyan Caves Precinct Plan
Young Street Plaza
Mittagong Station Transport Access Program
Hughes Street Car Park
Edgecliff Station Transport Access Program
T Way Cycleway Stage 2
Kevin Betts Stadium

Universities

TAFE Gosford Campus
CSU Port Macquarie
UOW Molecular Life Sciences Building Master Plan
UOW Arts and Social Sciences Building
UNSW Electrical Engineering Building Capital Renewal and Modernisation Project
UNSW Sciences and Engineering Building

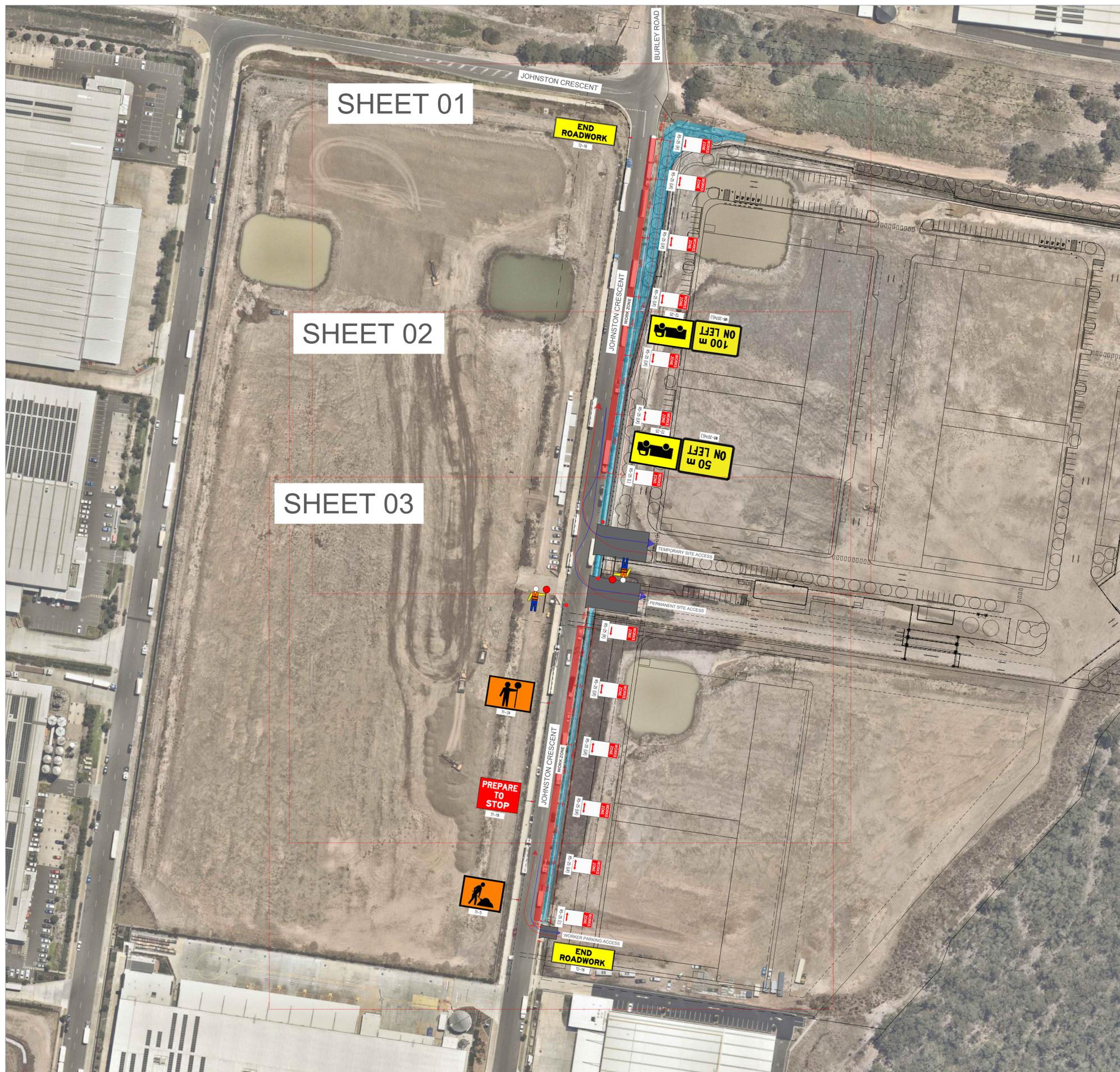
Commercial

MADE Marrickville
Wicks Park Mixed Use
Rosenthal Avenue Redevelopment

Residential

Wahroonga Estate
Lotus Apartment
Elara Medium Density Stages 10 and 11
9A 9B Green Square
Spencer Street Rose Bay

Appendix D – Traffic Guidance Scheme (TGS)



SITE NOTES:

- TfNSW Authorised Traffic Controllers to assist with truck movements in and out of the site.
- Traffic Controllers may stop pedestrians for short periods to allow vehicles to enter / exit the site.
- Two (2) Authorised Traffic Controllers will be present when a truck is exiting the site.

TRAFFIC GUIDANCE SCHEME NOTES:

- This TGS has been designed in accordance with AS 1742.3 (2019) and TfNSW Traffic Control at Works Site Manual V6.1 (TCAWS V6.1)
- Dimension D provided in accordance with TCAWS V6.1
- Refer to Truck Route Figures within the CTMP report for specified inbound / outbound routes.
- Traffic Controllers to manage vehicles, pedestrians and cyclists movements, as required.

LEGEND

- ➡ VEHICLE INGRESS
- ➡ VEHICLE EGRESS
- HOARDING CLASS B

19/01/26	CC-1	CTMP	MP	SS	GC
DATE	No.	REVISION HISTORY	DRW	CHK	QA
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4. CHECK ON SITE PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES					
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Key Plan					
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NEXTDC Project Number: S4.0002					
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Checked	SS	Date	19/01/26		
Scale	1:1000	Sheet	A1	File Name	S4-TRF-TTW-SW-DRG-0000-1001
Drawing Number	Rev				
S4-TRF-TTW-SW-DRG-0000-1001	CC-1				

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CONTINUE TO S4-TRF-TTW-SW-DRG-0000-1003

SITE NOTES:

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LEGEND

- ➡ VEHICLE INGRESS
- ➡ VEHICLE EGRESS
- HOARDING CLASS B

19/01/26	CC1	CTMP	MP	SS	GC
DATE	No.	REVISION HISTORY	DRW	CHK	QA
NOTE:					
1. ALL DRAWINGS TO BE READ IN CONJUNCTION WITH ASSOCIATED SPECIFICATION					
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Key Plan					
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NEXTDC Project Number: S4.0002					
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S4-TRF-TTW-SW-DRG-0000-1002 CC-1					

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CONTINUE TO S4-TRF-TTW-SW-DRG-0000-1002



CONTINUE TO S4-TRF-TTW-SW-DRG-0000-1004

SITE NOTES:

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LEGEND

- VEHICLE INGRESS
- VEHICLE EGRESS
- HOARDING CLASS B

19/01/26	01	CTMP	MP	SS	GC
DATE	No.	REVISION HISTORY	DRW	CHK	QA
<p>NOTE:</p> <ol style="list-style-type: none"> ALL DRAWINGS TO BE READ IN CONJUNCTION WITH ASSOCIATED SPECIFICATION DO NOT SCALE FROM DRAWINGS CONFIRM ALL MEASUREMENTS ON SITE CHECK ON SITE PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES ENSURE COORDINATION WITH OTHER TRADES ON SITE ASL = ABOVE SLAB LEVEL 					
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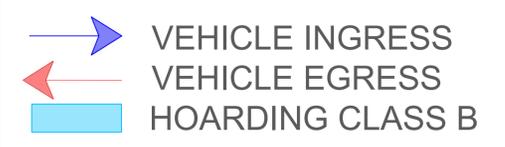
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LEGEND



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NOTE:					
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<p>Level 6, 73 Miller street North Sydney NSW 2060</p>					
<p>NOMINATED ENGINEERS NSW GRACE CARPP, CHRIS GENTILE</p>					
<p>THIS DRAWING IS COPYRIGHT AND IS THE PROPERTY OF TTW AND MUST NOT BE USED WITHOUT AUTHORIZATION. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT NOTES AND LEGENDS.</p>					
<p>Document Author Project Number</p>					
<p>211085</p>					
<p>Key Plan</p>					
Site:	S4	Stage:	01	Phase:	01
<p>NEXTDC Project Number: S4.0002</p>					
<p>Project Address 16 JOHNSTON CRESCENT, HORSLEY PARK NSW 2175</p>					
<p>Project Name NEXTDC S4</p>					
<p>Drawing Title TRAFFIC GUIDANCE SCHEME - SITE OVERALL SHEET 03</p>					
<p>Drawing Status SPATIAL COORDINATION NOT FOR CONSTRUCTION</p>					
Drawn	MP	Date	19/01/26		
Checked	SS	Date	19/01/26		
Scale	1:500	Sheet	A1	File Name	S4-TRF-TTW-SW-DRG-0000-1004
Drawing Number					Rev
S4-TRF-TTW-SW-DRG-0000-1004					CC-1

NOT FOR CONSTRUCTION



SITE NOTES:

- The signage and traffic control devices illustrated in this drawing is provided as a typical arrangement only. Additional traffic guidance schemes must be developed and supplied for any non-standard or special conditions
- The extent of the trench is shown indicatively. Contractor to ensure delineation of works is clearly shown and safety barrier to be installed to ensure safety of workers.

TRAFFIC GUIDANCE SCHEME NOTES:

- This TGS has been designed in accordance with AS 1742.3 (2019) and TfNSW Traffic Control at Works Site Manual V6.1 (TCAWS V6.1)
- Dimension D provided in accordance with TCAWS V6.1
- Refer to Truck Route Figures within the CTMP report for specified inbound / outbound routes.
- Traffic Controllers to manage vehicles, pedestrians and cyclists movements, as required.

LEGEND

- VEHICLE MOVEMENTS (indicated by blue arrows)
- INDICATIVE TRENCH EXTENT (indicated by orange shaded area)

NOT FOR CONSTRUCTION

19/01/26	CC1	CTMP	MP	SS	GC
DATE	No.	REVISION HISTORY	DRW	CHK	QA
<p>NOTE:</p> <ol style="list-style-type: none"> ALL DRAWINGS TO BE READ IN CONJUNCTION WITH ASSOCIATED SPECIFICATION DO NOT SCALE FROM DRAWINGS CONFIRM ALL MEASUREMENTS ON SITE CHECK ON SITE PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES ENSURE COORDINATION WITH OTHER TRADES ON SITE ASL = ABOVE SLAB LEVEL 					
<p>Principal Consultants</p> <p>Architect HJR</p> <p>Services aurecon</p> <p>Structural TTW</p> <p>Principal Contractor MULTIPLEX</p> <p>Client NEXTDC where the cloud lives™ NEXTDC GPO Box 3219 Brisbane QLD 4001 T: +61 7 3177 4777</p> <p>(Contractor / Consultant / Document Author) TTW www.ttweengineers.com</p> <p>Level 6, 73 Miller street North Sydney NSW 2060 NOMINATED ENGINEERS NSW GRACE CARPP, CHRIS GENTLE</p> <p>THIS DRAWING IS COPYRIGHT AND IS THE PROPERTY OF TTW AND MUST NOT BE USED WITHOUT AUTHORIZATION. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT NOTES AND LEGENDS.</p> <p>Document Author Project Number 211085</p> <p>Key Plan </p>					
Site:	S4	Stage:	01	Phase:	01
<p>NEXTDC Project Number: S4.0002</p> <p>Project Address 16 JOHNSTON CRESCENT, HORSLEY PARK NSW 2175</p> <p>Project Name NEXTDC S4</p> <p>Drawing Title TRAFFIC GUIDANCE SCHEME - TYPICAL SIGNAGE FOR TRENCHING</p> <p>Drawing Status SPATIAL COORDINATION NOT FOR CONSTRUCTION</p> <p>Drawn MP Date 19/01/26</p> <p>Checked SS Date 19/01/26</p> <p>Scale 1:1000</p> <p>Sheet A1</p> <p>File Name S4-TRF-TTW-SW-DRG-0000-2001</p> <p>Drawing Number S4-TRF-TTW-SW-DRG-0000-2001</p> <p>Rev CC-1</p>					



SITE NOTES:

- The signage and traffic control devices illustrated in this drawing is provided as a typical arrangement only. Additional traffic guidance schemes must be developed and supplied for any non-standard or special conditions
- The extent of the trench is shown indicatively. Contractor to ensure delineation of works is clearly shown and safety barrier to be installed to ensure safety of workers.

TRAFFIC GUIDANCE SCHEME NOTES:

- This TGS has been designed in accordance with AS 1742.3 (2019) and TfNSW Traffic Control at Works Site Manual V6.1 (TCAWS V6.1)
- Dimension D provided in accordance with TCAWS V6.1
- Refer to Truck Route Figures within the CTMP report for specified inbound / outbound routes.
- Traffic Controllers to manage vehicles, pedestrians and cyclists movements, as required.

LEGEND

- VEHICLE MOVEMENTS
- ▬ INDICATIVE TRENCH EXTENT

19/01/26	CC1	CTMP	MP	SS	GC
DATE	No.	REVISION HISTORY	DRW	CHK	QA
<p>NOTE:</p> <ol style="list-style-type: none"> ALL DRAWINGS TO BE READ IN CONJUNCTION WITH ASSOCIATED SPECIFICATION DO NOT SCALE FROM DRAWINGS CONFIRM ALL MEASUREMENTS ON SITE CHECK ON SITE PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES ENSURE COORDINATION WITH OTHER TRADES ON SITE ASL = ABOVE SLAB LEVEL 					
<p>Principal Consultants</p> <p>Architect HJR</p> <p>Services aurecon</p> <p>Structural TTW</p> <p>Principal Contractor MULTIPLEX</p> <p>Client NEXTDC where the cloud lives™ NEXTDC GPO Box 3219 Brisbane QLD 4001 T: +61 7 3177 4777</p> <p>(Contractor / Consultant / Document Author) TTW www.ttweengineers.com</p> <p>Level 6, 73 Miller street North Sydney NSW 2060 NOMINATED ENGINEERS NSW GRACE CARPP, CHRIS GENTILE</p> <p>THIS DRAWING IS COPYRIGHT AND IS THE PROPERTY OF TTW AND MUST NOT BE USED WITHOUT AUTHORIZATION. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT NOTES AND LEGENDS.</p> <p>Document Author Project Number 211085</p> <p>Key Plan </p>					
Site:	S4	Stage:	01	Phase:	01
<p>NEXTDC Project Number: S4.0002</p> <p>Project Address 16 JOHNSTON CRESCENT, HORSLEY PARK NSW 2175</p> <p>Project Name NEXTDC S4</p> <p>Drawing Title TRAFFIC GUIDANCE SCHEME - TYPICAL SIGNAGE FOR TRENCHING SHEET 01</p> <p>Drawing Status SPATIAL COORDINATION NOT FOR CONSTRUCTION</p> <p>Drawn MP Date 19/01/26</p> <p>Checked SS Date 19/01/26</p> <p>Scale 1:500</p> <p>Sheet A1</p> <p>File Name S4-TRF-TTW-SW-DRG-0000-2002</p> <p>Drawing Number S4-TRF-TTW-SW-DRG-0000-2002</p> <p>Rev CC-1</p>					

NOT FOR CONSTRUCTION

CONTINUE TO S4-TRF-TTW-SW-DRG-0000-2002



CONTINUE TO S4-TRF-TTW-SW-DRG-0000-2004

SITE NOTES:

- The signage and traffic control devices illustrated in this drawing is provided as a typical arrangement only. Additional traffic guidance schemes must be developed and supplied for any non-standard or special conditions
- The extent of the trench is shown indicatively. Contractor to ensure delineation of works is clearly shown and safety barrier to be installed to ensure safety of workers.

TRAFFIC GUIDANCE SCHEME NOTES:

- This TGS has been designed in accordance with AS 1742.3 (2019) and TfNSW Traffic Control at Works Site Manual V6.1 (TCAWS V6.1)
- Dimension D provided in accordance with TCAWS V6.1
- Refer to Truck Route Figures within the CTMP report for specified inbound / outbound routes.
- Traffic Controllers to manage vehicles, pedestrians and cyclists movements, as required.

LEGEND

- VEHICLE MOVEMENTS
- INDICATIVE TRENCH EXTENT

19/01/26	CC1	CTMP	MP	SS	GC
DATE	No.	REVISION HISTORY	DRW	CHK	QA
<p>NOTE:</p> <ol style="list-style-type: none"> ALL DRAWINGS TO BE READ IN CONJUNCTION WITH ASSOCIATED SPECIFICATION DO NOT SCALE FROM DRAWINGS CONFIRM ALL MEASUREMENTS ON SITE CHECK ON SITE PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES ENSURE COORDINATION WITH OTHER TRADES ON SITE ASL = ABOVE SLAB LEVEL 					
<p>Principal Consultants</p> <p>Architect HR</p> <p>Services aurecon</p> <p>Structural TTW</p> <p>Principal Contractor MULTIPLEX</p>					
<p>Client</p> <p>NEXTDC where the cloud lives™</p> <p>NEXTDC GPO Box 3219 Brisbane QLD 4001 T: +61 7 3177 4777</p> <p>(Contractor / Consultant / Document Author)</p> <p>www.ttweengineers.com</p> <p>Level 6, 73 Miller street North Sydney NSW 2060</p> <p>NOMINATED ENGINEERS NSW GRACE CARPP, CHRIS GENTILE</p> <p>THIS DRAWING IS COPYRIGHT AND IS THE PROPERTY OF TTW AND MUST NOT BE USED WITHOUT AUTHORIZATION. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT NOTES AND LEGENDS.</p> <p>Document Author Project Number 211085</p>					
<p>Key Plan</p>					
Site:	S4	Stage:	01	Phase:	01
<p>NEXTDC Project Number: S4.0002</p> <p>Project Address 16 JOHNSTON CRESCENT, HORSLEY PARK NSW 2175</p> <p>Project Name NEXTDC S4</p> <p>Drawing Title TRAFFIC GUIDANCE SCHEME - TYPICAL SIGNAGE FOR TRENCHING SHEET 02</p> <p>Drawing Status SPATIAL COORDINATION NOT FOR CONSTRUCTION</p> <p>Drawn MP Date 19/01/26</p> <p>Checked SS Date 19/01/26</p> <p>Scale 1:500</p> <p>Sheet A1</p> <p>File Name S4-TRF-TTW-SW-DRG-0000-2003</p> <p>Drawing Number S4-TRF-TTW-SW-DRG-0000-2003</p> <p>Rev CC-1</p>					

NOT FOR CONSTRUCTION

CONTINUE TO S4-TRF-TTW-SW-DRG-0000-2003



SITE NOTES:

- The signage and traffic control devices illustrated in this drawing is provided as a typical arrangement only. Additional traffic guidance schemes must be developed and supplied for any non-standard or special conditions
- The extent of the trench is shown indicatively. Contractor to ensure delineation of works is clearly shown and safety barrier to be installed to ensure safety of workers.

TRAFFIC GUIDANCE SCHEME NOTES:

- This TGS has been designed in accordance with AS 1742.3 (2019) and TfNSW Traffic Control at Works Site Manual V6.1 (TCAWS V6.1)
- Dimension D provided in accordance with TCAWS V6.1
- Refer to Truck Route Figures within the CTMP report for specified inbound / outbound routes.
- Traffic Controllers to manage vehicles, pedestrians and cyclists movements, as required.

LEGEND

- VEHICLE MOVEMENTS
- ▭ INDICATIVE TRENCH EXTENT

19/01/26	CC1	CTMP	MP	SS	GC
DATE	No.	REVISION HISTORY	DRW	CHK	QA
<p>NOTE:</p> <ol style="list-style-type: none"> ALL DRAWINGS TO BE READ IN CONJUNCTION WITH ASSOCIATED SPECIFICATION DO NOT SCALE FROM DRAWINGS CONFIRM ALL MEASUREMENTS ON SITE CHECK ON SITE PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES ENSURE COORDINATION WITH OTHER TRADES ON SITE ASL = ABOVE SLAB LEVEL 					
<p>Principal Consultants Architect HJR Services aurecon Structural TTW</p>					
<p>Principal Contractor MULTIPLEX</p>					
<p>Client NEXTDC where the cloud lives™ NEXTDC GPO Box 3219 Brisbane QLD 4001 T: +61 7 3177 4777</p>					
<p>(Contractor / Consultant / Document Author) TTW www.ttweengineers.com</p>					
<p>Level 6, 73 Miller street North Sydney NSW 2060 NOMINATED ENGINEERS NSW GRACE CARPP, CHRIS GENTILE</p>					
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<p>Key Plan </p>					
Site:	S4	Stage:	01	Phase:	01
<p>NEXTDC Project Number: S4.0002</p>					
<p>Project Address 16 JOHNSTON CRESCENT, HORSLEY PARK NSW 2175</p>					
<p>Project Name NEXTDC S4</p>					
<p>Drawing Title TRAFFIC GUIDANCE SCHEME - TYPICAL SIGNAGE FOR TRENCHING SHEET 03</p>					
<p>Drawing Status SPATIAL COORDINATION NOT FOR CONSTRUCTION</p>					
Drawn	MP	Date	19/01/26		
Checked	SS	Date	19/01/26		
Scale	1:500	Sheet	A1	File Name	S4-TRF-TTW-SW-DRG-0000-2004
Drawing Number	S4-TRF-TTW-SW-DRG-0000-2004		Rev		
<p>S4-TRF-TTW-SW-DRG-0000-2004 CC-1</p>					

NOT FOR CONSTRUCTION



GENERAL NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH AS1742.3 & TCAWS 6.1 2022
2. ALL TRAFFIC CONTROL DIAGRAMS TO BE READ IN CONJUNCTION WITH THE TCAWS 6.1 2022
3. NON-APPLICABLE EXISTING SIGNAGE SHALL BE COVERED EG. SPEED SIGNS DUE TO THE TEMPORARY SPEED ZONE.
4. ALL SIGNAGE DISTANCE SHALL COMPLY WITH AS 1742.3 & TCAWS 6.1 2022
5. IN ACCORDANCE WITH TCAWS 6.1 2022 TRAFFIC CONTROLLERS TO ASSIST PEDESTRIANS WITH MOVEMENT THROUGH & AROUND THE WORKSITE.
6. SIGNAGE SHALL BE PLACED ON THE SIDE OF THE ROAD ADJACENT TO THE TRAFFIC FLOW.
7. REMOVAL OF TRAFFIC CONTROL SIGNS AND DEVICES SHOULD BE UNDERTAKEN IN THE REVERSE ORDER OF ERECTION, PROGRESSING FROM THE WORK AREA OUT TOWARD THE APPROACHES.

RECOMMENDED TAPER LENGTH

APPROXIMATE SPEED OF TRAFFIC KMH	TRAFFIC CONTROL AT BEGINNING OF TAPER	LATERAL TAPER	MERGE TAPER
45 OR LESS	15	15	15
46 - 55	15	15	30
56 - 65	30	30	60
66 - 75	N/A	70	115
76 - 85	N/A	80	130
86 - 95	N/A	90	145
96 - 105	N/A	100	160
> 105	N/A	110	180

DIMENSION 'D' (AS 1742.3)

SPEED OF TRAFFIC KMH	DIMENSION 'D' M
45 OR LESS	5m
46 - 55	15m
56 - 65	45m
GREATER THAN 65 KMH	EQUAL TO POSTED SPEED

TOLERANCES

POSITIONING OF SIGNS
 MINIMUM 10% LESS THAN THE DISTANCE OR LENGTHS GIVEN
 MAXIMUM 25% MORE THAN THE DISTANCE OR LENGTHS GIVEN
 SPACING OF DELINEATING DEVICES
 MAXIMUM 10% MORE THAN THE SPACING GIVEN
 NO MINIMUM

LANE WIDTHS

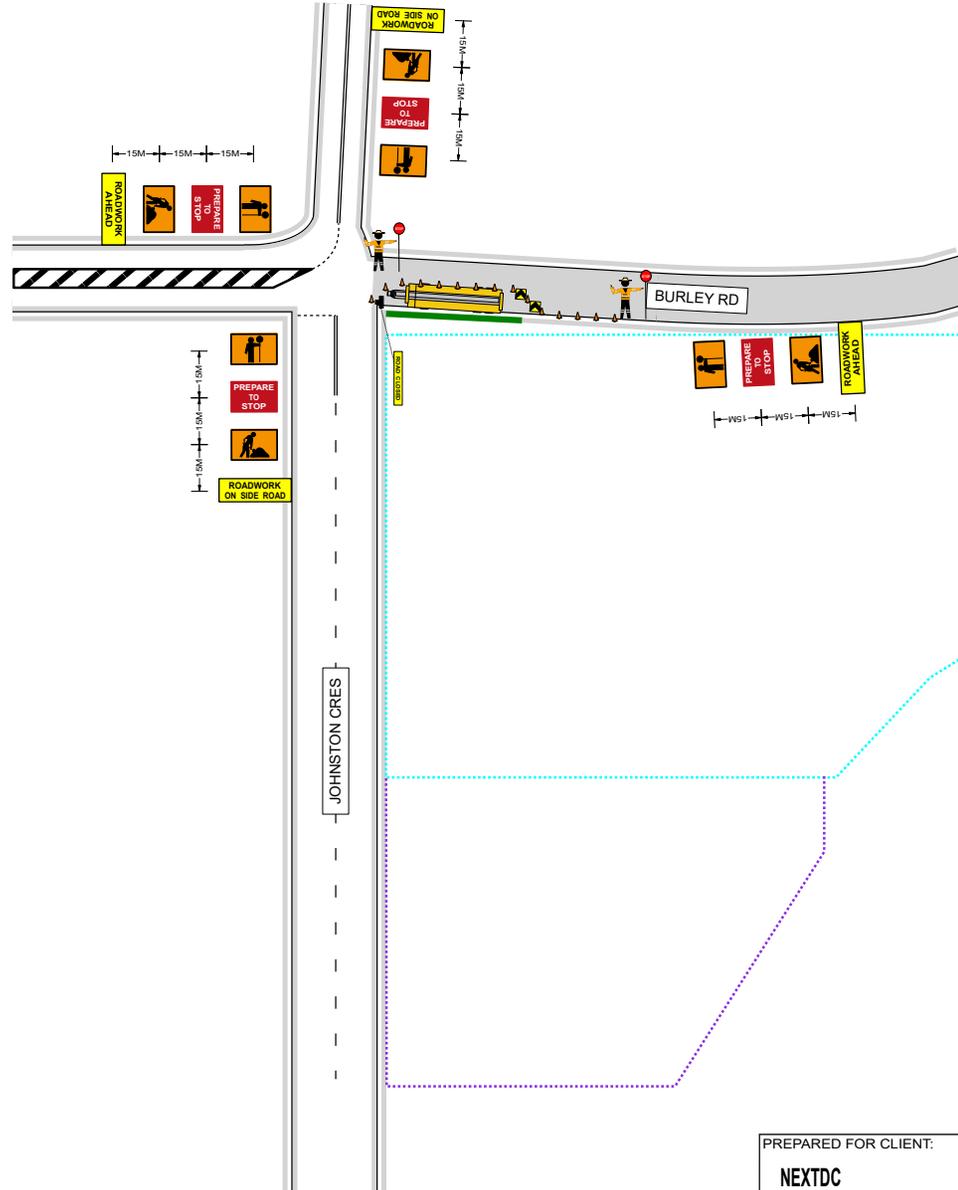
THE MIN LANE WIDTH TO BE PROVIDED THROUGH OR PAST THE WORKSITE SHALL BE 3.0m (3.5m DESIRABLE)

QUEUE MANAGEMENT PLAN

AT ALL TIMES DURING THE COURSE OF THE WORK TRAFFIC QUEUES SHALL BE MONITORED TO ENSURE THAT TRAFFIC DOES NOT EXCEED BEYOND THE LIMITS OF ADVANCED WARNING SIGNS

VEHICLE MOVEMENT PLAN

ALL WORK VEHICLES TO ENTER AND EXIT WORKSITE UNDER THE DIRECTION OF TRAFFIC CONTROLLER WITH THE TRAFFIC FLOW ON DESIGNATED UHF CHANNEL



LEGEND

- TEMPORARY SIGNAGE CONFORMING TO AS1742.3 & TCAWS V.6.1
- TRAFFIC CONES
- LOT 305 SITE BOUNDARY
- LOT 306 SITE BOUNDARY
- A-CLASS HOARDING

TC TO GUIDE PEDESTRIANS AROUND SITE

FOOTPATH CLOSED

USE OTHER FOOTPATH

Use "Footpath Closed" or "Use Other Footpath" signage where applicable, in conjunction with Pedestrians Left and Right

Manage pedestrian movement do not allow pedestrians to enter work areas use signs, barriers, plastic containment to cordon work areas

MINIMUM REQUIREMENTS

- 2 - Traffic Controller/s (inc Team Leader)
- 1 - Vehicle/s (B Class Arrow Board)
- 0 - Cone Truck / POD Truck
- 0 - C Class Arrow Board (Trailer)
- 0 - Truck Mounted Attenuator
- 0 - VMS Board/s (Trailer)
- 0 - Light Tower/s (Trailer)
- 0 - Portable Traffic Signal/s (set of 2)

PREPARED FOR CLIENT:

NEXTDC

DESIGNED: **Sabah Qayum**

SIGNATURE: *Sabah Qayum*

TCT1053612
PWZTMP-RIICWD503D

Plan Approved by: Khaled Jamal
 PWZTMP No: TCT0040738
 admin@trafficciencyteam.com.au



PLANNING

REVISIONS

REV	DATE	DESCRIPTION
00		

PLAN MAY NOT BE TO SCALE

This site specific TGS is based on NSW TCAWS Ver 6.1 (2022) & must be installed & controlled by qualified traffic controllers with current Traffic Controller & signaller Traffic Controller qualifications.
 Modifications to this plan must be approved by a person holding the PWZTMP qualification, and must be supported by a TRP or risk assessment. TCAWS 7.20.4
 The TGS system may vary the positioning of signs and devices provided the requirements of Section 7 (6.3) TCAWS regarding Tolerance on Positioning, are met.
 Where vehicles are within 1.5m of the traffic, a speed zone of 40km/h must be implemented.
 Traffic controller/s to identify and make note of escape routes prior to commencement of works.
 Local conditions may require signs and devices to be placed exactly in accordance with the TGS program. However, it is permitted for 10% to 15% protection signs 10% less and up to 25% greater than the TGS indicated distance.
 Signage mounting instructions may not apply at some intersections. Therefore warning signs may need to be placed at the side of the road.
 Signs on the Class 1 infrastructure, positioned adjacent to the footpath or where vehicle parking occurs place signs in the parking lane or elevated on posts. They must be positioned so that they are in sight view of passing motorists.
 The TGS is approved for use by Traffic Efficiency Team ONLY.
 The client takes no responsibility for unauthorised and unapproved implementation of the TGS.

WORK LOCATION DETAILS		Term:	SHORT
Road Name:	JOHNSTON CRES & BURLEY RD, HORSLEY PARK NSW	Road Type:	TWO WAY
WORKS	A CLASS HOARDING	Speed Limit:	50 KPH
TGS No.	TGS 0005	Travelled Path:	AROUND
Date:	04/02/2026	Operation:	Stop/Slow Pedestrian Management

GENERAL NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH AS1742.3 & TCAWS 6.1 2022
2. ALL TRAFFIC CONTROL DIAGRAMS TO BE READ IN CONJUNCTION WITH THE TCAWS 6.1 2022
3. NON-APPLICABLE EXISTING SIGNAGE SHALL BE COVERED EG. SPEED SIGNS DUE TO THE TEMPORARY SPEED ZONE.
4. ALL SIGNAGE DISTANCE SHALL COMPLY WITH AS 1742.3 & TCAWS 6.1 2022
5. IN ACCORDANCE WITH TCAWS 6.1 2022 TRAFFIC CONTROLLERS TO ASSIST PEDESTRIANS WITH MOVEMENT THROUGH & AROUND THE WORKSITE.
6. SIGNAGE SHALL BE PLACED ON THE SIDE OF THE ROAD ADJACENT TO THE TRAFFIC FLOW.
7. REMOVAL OF TRAFFIC CONTROL SIGNS AND DEVICES SHOULD BE UNDERTAKEN IN THE REVERSE ORDER OF ERECTION, PROGRESSING FROM THE WORK AREA OUT TOWARD THE APPROACHES.

RECOMMENDED TAPER LENGTH

APPROXIMATE SPEED OF TRAFFIC KMH	TRAFFIC CONTROL BEGINNING OF TAPER	LATERAL TAPER	MERGE TAPER
45 OR LESS	15	15	15
46 - 55	15	15	30
56 - 65	30	30	60
66 - 75	N/A	70	115
76 - 85	N/A	80	130
86 - 95	N/A	90	145
96 - 105	N/A	100	160
> 105	N/A	110	180

DIMENSION 'D' (AS 1742.3)

SPEED OF TRAFFIC KMH	DIMENSION 'D' M
45 OR LESS	5m
46 - 55	15m
56 - 65	45m
GREATER THAN 65 KMH	EQUAL TO POSTED SPEED

TOLERANCES

POSITIONING OF SIGNS
 MINIMUM 10% LESS THAN THE DISTANCE OR LENGTHS GIVEN
 MAXIMUM 25% MORE THAN THE DISTANCE OR LENGTHS GIVEN
 SPACING OF DELINEATING DEVICES
 MAXIMUM 10% MORE THAN THE SPACING GIVEN
 NO MINIMUM

LANE WIDTHS

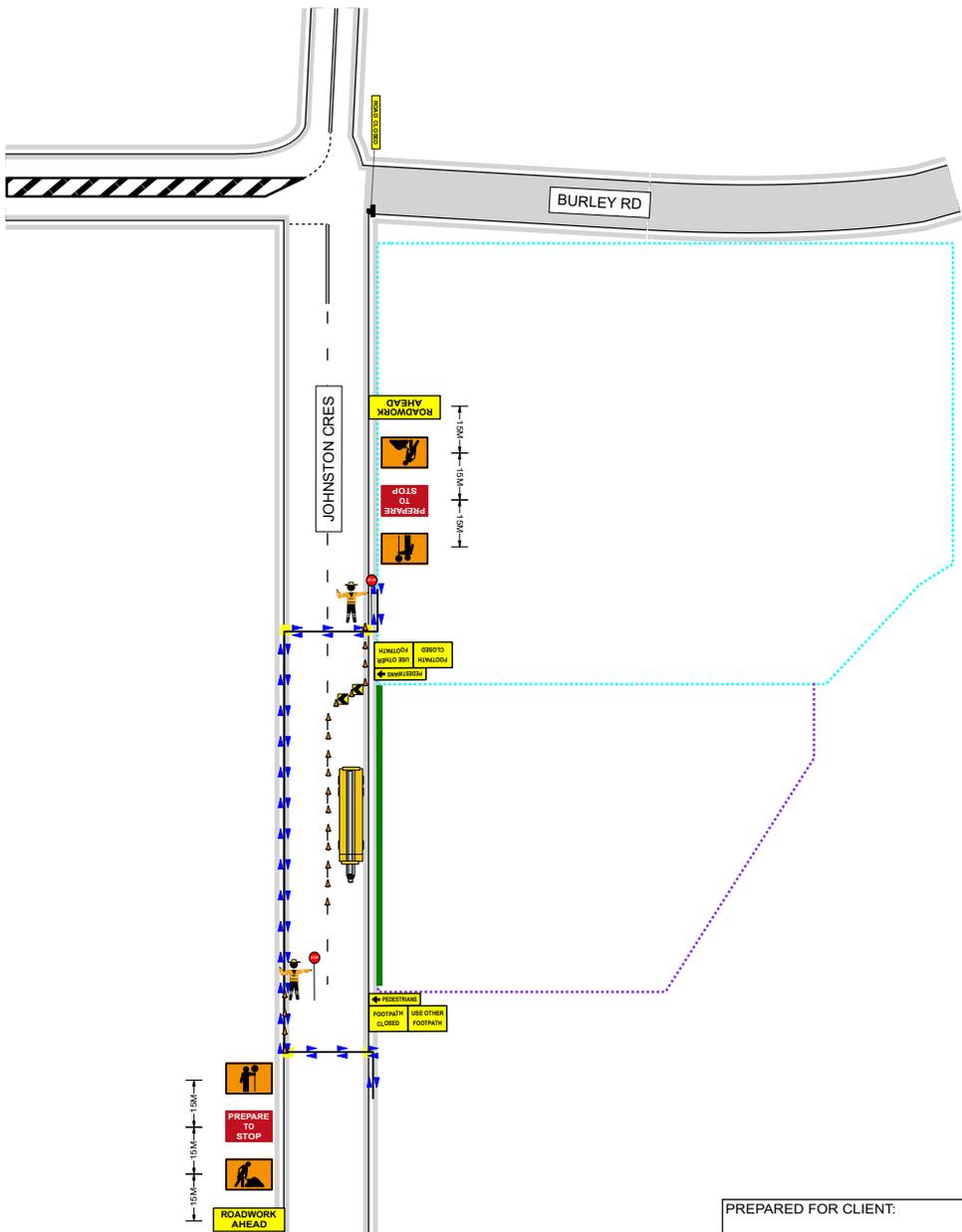
THE MIN LANE WIDTH TO BE PROVIDED THROUGH OR PAST THE WORKSITE SHALL BE 3.0m (3.5m DESIRABLE)

QUEUE MANAGEMENT PLAN

AT ALL TIMES DURING THE COURSE OF THE WORK TRAFFIC QUEUES SHALL BE MONITORED TO ENSURE THAT TRAFFIC DOES NOT EXCEED BEYOND THE LIMITS OF ADVANCED WARNING SIGNS

VEHICLE MOVEMENT PLAN

ALL WORK VEHICLES TO ENTER AND EXIT WORKSITE UNDER THE DIRECTION OF TRAFFIC CONTROLLER WITH THE TRAFFIC FLOW ON DESIGNATED UHF CHANNEL



LEGEND

- TEMPORARY SIGNAGE CONFORMING TO AS1742.3 & TCAWS V.6.1
- TRAFFIC CONES
- LOT 305 SITE BOUNDARY
- LOT 306 SITE BOUNDARY
- HOARDING ESTABLISHMENT
- PEDESTRIAN ROUTE
- PEDESTRIAN RAMP

TC TO GUIDE PEDESTRIANS AROUND SITE

FOOTPATH CLOSED

USE OTHER FOOTPATH

Use "Footpath Closed" or "Use Other Footpath" signage where applicable, as required, in conjunction with Pedestrians Left and Right

Manage pedestrian movement do not allow pedestrians to enter work areas use signs, barriers, plastic containment to cordon work areas

MINIMUM REQUIREMENTS

- 2 - Traffic Controller/s (inc Team Leader)
- 1 - Vehicle/s (B Class Arrow Board)
- 0 - Cone Truck / POD Truck
- 0 - C Class Arrow Board (Trailer)
- 0 - Truck Mounted Attenuator
- 0 - VMS Board/s (Trailer)
- 0 - Light Tower/s (Trailer)
- 0 - Portable Traffic Signal/s (set of 2)

PREPARED FOR CLIENT:

NEXTDC

DESIGNED: Sabah Qayum SIGNATURE: Sabah Qayum

TCT1053612
PWZTMP-RIICWD503D

Plan Approved by: Khalid Jamal
 PWZTMP No: TCT0040738
 admin@trafficciencyteam.com.au



REVISIONS

REV	DATE	DESCRIPTION
00		

PLAN MAY NOT BE TO SCALE

This site specific TGS is based on TNBSW TCAWS Ver 6.1 (2022) & must be installed & covered up by qualified traffic controllers with current Traffic Controller & signpost Traffic Controller qualifications. Contractors must be approved by a person holding the PWZTMP qualification, and must be supported by a TRP or risk assessment. TCAWS 7.20.4 The TGS system may vary the positioning of signs and devices provided the requirements of Section 7.10.3 TCAWS regarding Tolerance on Positioning, are met. These notices are within 1.5m of the traffic, a signed zone of 45m must be implemented. Traffic controller's to identify and make note of escape routes prior to commencement of works. Local Contractors may not allow signs and devices to be placed exactly in accordance with the TGS program. Pedestrians is permitted for the TC to prevent signs 10% less and up to 25% greater than the TGS indicated distance. Signs marking measurements may extend across intersections. Therefore warning signs may need to be placed on the side of the road. Signs on the Class 1 retro-reflective, positioned adjacent to the footpath or where vehicle parking occurs place signs in the parking lane or adjacent on roads. They must be positioned so that they are in sight area of passing motorists. The TGS is approved for use by Traffic Efficiency Team ONLY. The client takes no responsibility for unauthorised and unapproved implementation of the TGS.

WORK LOCATION DETAILS		Term:	SHORT
Road Name:	16 JOHNSTON CRES, HORSLEY PARL NSW	Road Type:	TWO WAY
WORKS	HOARDING INSTALL	Speed Limit:	50 KPH
TGS No.	TGS 0003	Travelled Path:	AROUND
Date:	04/02/2026	Operation:	Stop/Slow Pedestrian Management

GENERAL NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH AS1742.3 & TCAWS 6.1 2022
2. ALL TRAFFIC CONTROL DIAGRAMS TO BE READ IN CONJUNCTION WITH THE TCAWS 6.1 2022
3. NON-APPLICABLE EXISTING SIGNAGE SHALL BE COVERED EG. SPEED SIGNS DUE TO THE TEMPORARY SPEED ZONE.
4. ALL SIGNAGE DISTANCE SHALL COMPLY WITH AS 1742.3 & TCAWS 6.1 2022
5. IN ACCORDANCE WITH TCAWS 6.1 2022 TRAFFIC CONTROLLERS TO ASSIST PEDESTRIANS WITH MOVEMENT THROUGH & AROUND THE WORKSITE.
6. SIGNAGE SHALL BE PLACED ON THE SIDE OF THE ROAD ADJACENT TO THE TRAFFIC FLOW.
7. REMOVAL OF TRAFFIC CONTROL SIGNS AND DEVICES SHOULD BE UNDERTAKEN IN THE REVERSE ORDER OF ERECTION, PROGRESSING FROM THE WORK AREA OUT TOWARD THE APPROACHES.

RECOMMENDED TAPER LENGTH

APPROXIMATE SPEED OF TRAFFIC KMH	TRAFFIC CONTROL AT BEGINNING OF TAPER	LATERAL MERGE TAPER	TRAFFIC CONTROL AT END OF TAPER
45 OR LESS	15	15	15
46 - 55	15	15	30
56 - 65	30	30	60
66 - 75	N/A	70	115
76 - 85	N/A	80	130
86 - 95	N/A	90	145
96 - 105	N/A	100	160
> 105	N/A	110	180

DIMENSION 'D' (AS 1742.3)

SPEED OF TRAFFIC KMH	DIMENSION 'D' M
45 OR LESS	5m
46 - 55	15m
56 - 65	45m
GREATER THAN 65 KMH	EQUAL TO POSTED SPEED

TOLERANCES

POSITIONING OF SIGNS
MINIMUM 10% LESS THAN THE DISTANCE OR LENGTHS GIVEN
MAXIMUM 25% MORE THAN THE DISTANCE OR LENGTHS GIVEN
SPACING OF DELINEATING DEVICES
MAXIMUM 10% MORE THAN THE SPACING GIVEN
NO MINIMUM

LANE WIDTHS

THE MIN LANE WIDTH TO BE PROVIDED THROUGH OR PAST THE WORKSITE SHALL BE 3.0m (3.5m DESIRABLE)

QUEUE MANAGEMENT PLAN

AT ALL TIMES DURING THE COURSE OF THE WORK TRAFFIC QUEUES SHALL BE MONITORED TO ENSURE THAT TRAFFIC DOES NOT EXCEED BEYOND THE LIMITS OF ADVANCED WARNING SIGNS

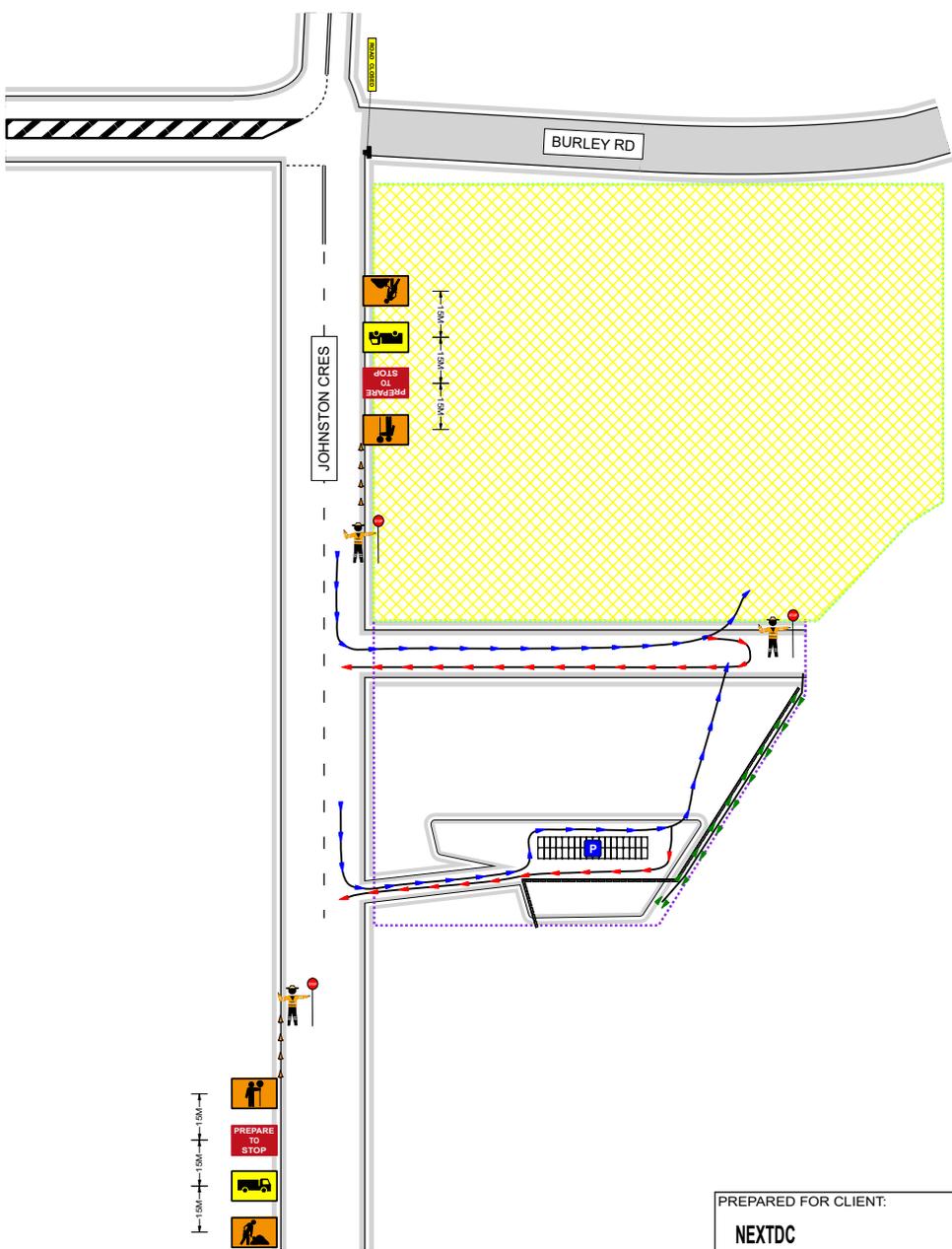
VEHICLE MOVEMENT PLAN

ALL WORK VEHICLES TO ENTER AND EXIT WORKSITE UNDER THE DIRECTION OF TRAFFIC CONTROLLER WITH THE TRAFFIC FLOW ON DESIGNATED UHF CHANNEL

REV	DATE	DESCRIPTION
00		

PLAN MAY NOT BE TO SCALE

This site specific TGS is based on TNSW TCAWS Ver 6.1 (2022) & must be installed & controlled by qualified traffic controllers with current Traffic Controller & sign placement Traffic Controller qualifications. Controllers with current Traffic Controller & sign placement Traffic Controller qualifications in this state must be approved by a person holding the PWZTMP qualification, and must be supported by a TRP or risk assessment. TCAWS 7.20.4 The TGS system may vary the positioning of signs and devices provided the requirements of Section 7 (1.3) TCAWS regarding Tolerance on Positioning, are met. Where vehicles are within 1.5m of the traffic, a tapered zone of 45m must be implemented. Traffic controller's to identify and make note of escape routes prior to commencement of works. Local Contractors may use advance signs and devices to be placed exactly in accordance with the TGS program. However, it is permitted for the 1.5m to prevent signs 10% less and up to 25% greater than the TGS indicated distance. Signs marking measurements may reflect various intersections. Therefore warning signs may need to be placed at the side of the road. Signs are to be Class 1 reflective, reflective or illuminated adjacent to the footpath or where vehicle parking occurs phase signs in the parking lane or elevated on posts. They must be positioned so that they are in sight view of passing motorists. The TGS is approved for use by Traffic Efficiency Team ONLY. The Traffic Efficiency Team is not responsible for installation and subsequent implementation of the TGS.



LEGEND

- TEMPORARY SIGNAGE CONFORMING TO AS1742.3 & TCAWS V.6.1
- TRAFFIC CONES
- LOT 305 SITE BOUNDARY
- LOT 306 SITE BOUNDARY
- BULK EX EXCLUSION ZONE
- TRUCK ENTRY ROUTE
- TRUCK EXIT ROUTE
- PEDESTRIAN ROUTE

TC TO GUIDE PEDESTRIANS AROUND SITE

FOOTPATH CLOSED

USE OTHER FOOTPATH

Use "Footpath Closed" or "Use Other Footpath" signage where applicable, as required, in conjunction with Pedestrians Left and Right

Manage pedestrian movement do not allow pedestrians to enter work areas use signs, barriers, plastic containment to cordon work areas

- MINIMUM REQUIREMENTS**
- 3 - Traffic Controller/s (inc Team Leader)
 - 1 - Vehicle/s (B Class Arrow Board)
 - 0 - Cone Truck / POD Truck
 - 0 - C Class Arrow Board (Trailer)
 - 0 - Truck Mounted Attenuator
 - 0 - VMS Board/s (Trailer)
 - 0 - Light Tower/s (Trailer)
 - 0 - Portable Traffic Signal/s (set of 2)

PREPARED FOR CLIENT:

NEXTDC

DESIGNED: Sabah Qayum

SIGNATURE: Sabah Qayum

TCT1053612
PWZTMP-RIICWD503D

Plan Approved by: Khaled Jamal
PWZTMP No: TCT0040738
admin@trafficciencyteam.com.au

TET
TRAFFIC EFFICIENCY TEAM

WORK LOCATION DETAILS		Term:	SHORT
Road Name:	16 JOHNSTON CRES, HORSLEY PARK NSW	Road Type:	TWO WAY
WORKS	BULK EX WORKS	Speed Limit:	50 KPH
TGS No.	TGS 0007	Travelled Path:	AROUND
Date:	06/02/2026	Operation:	Stop/Slow Pedestrian Management

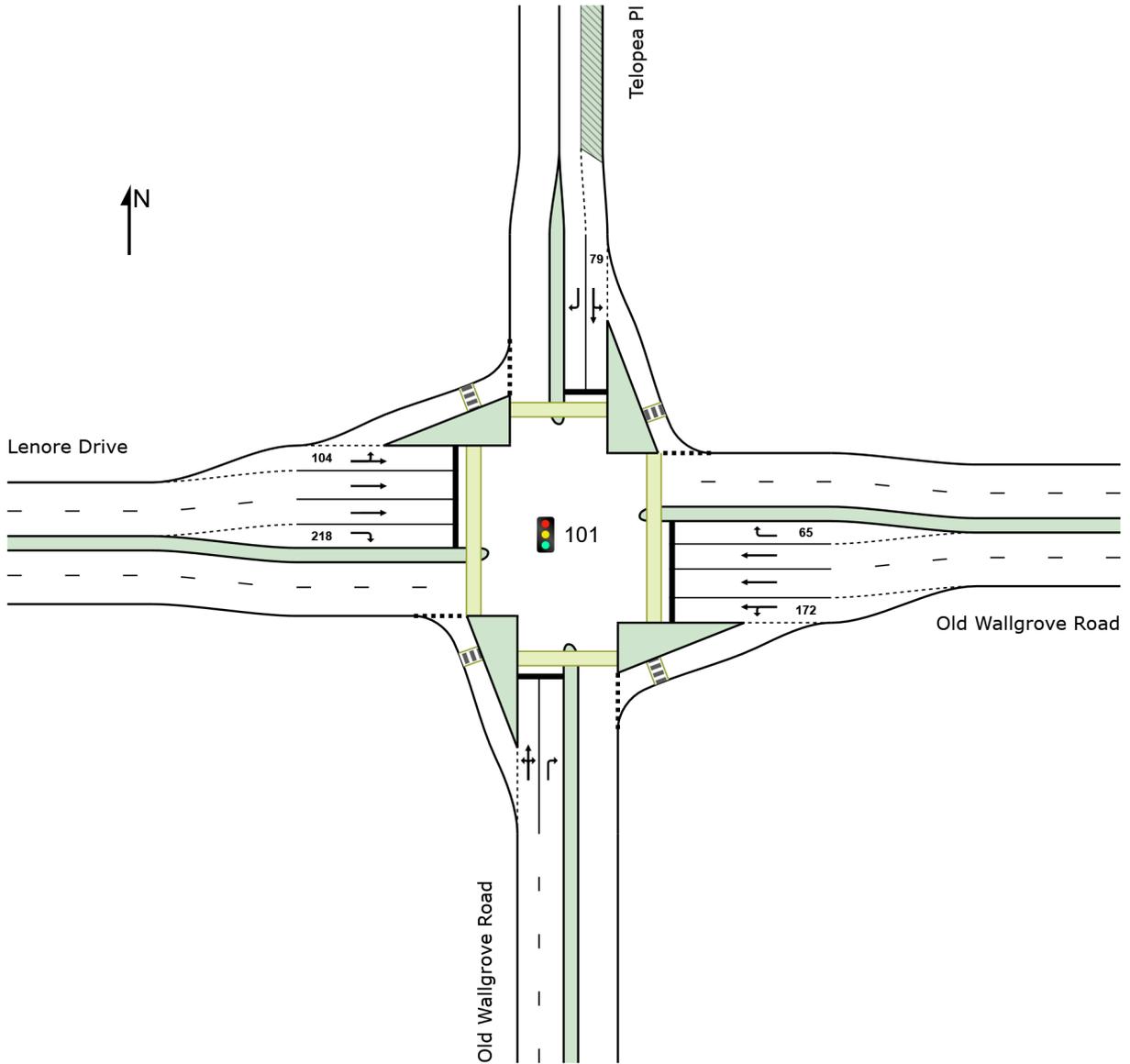
Appendix E – SIDRA Model Results

SITE LAYOUT

**Site: 101 [Telopea PI & Old Wallgrove Rd & Lenore Dr - AM
(Site Folder: Existing Scenario 2023)]**

Existing Scenario - AM
AM Peak: 7:00 - 8:00am
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.

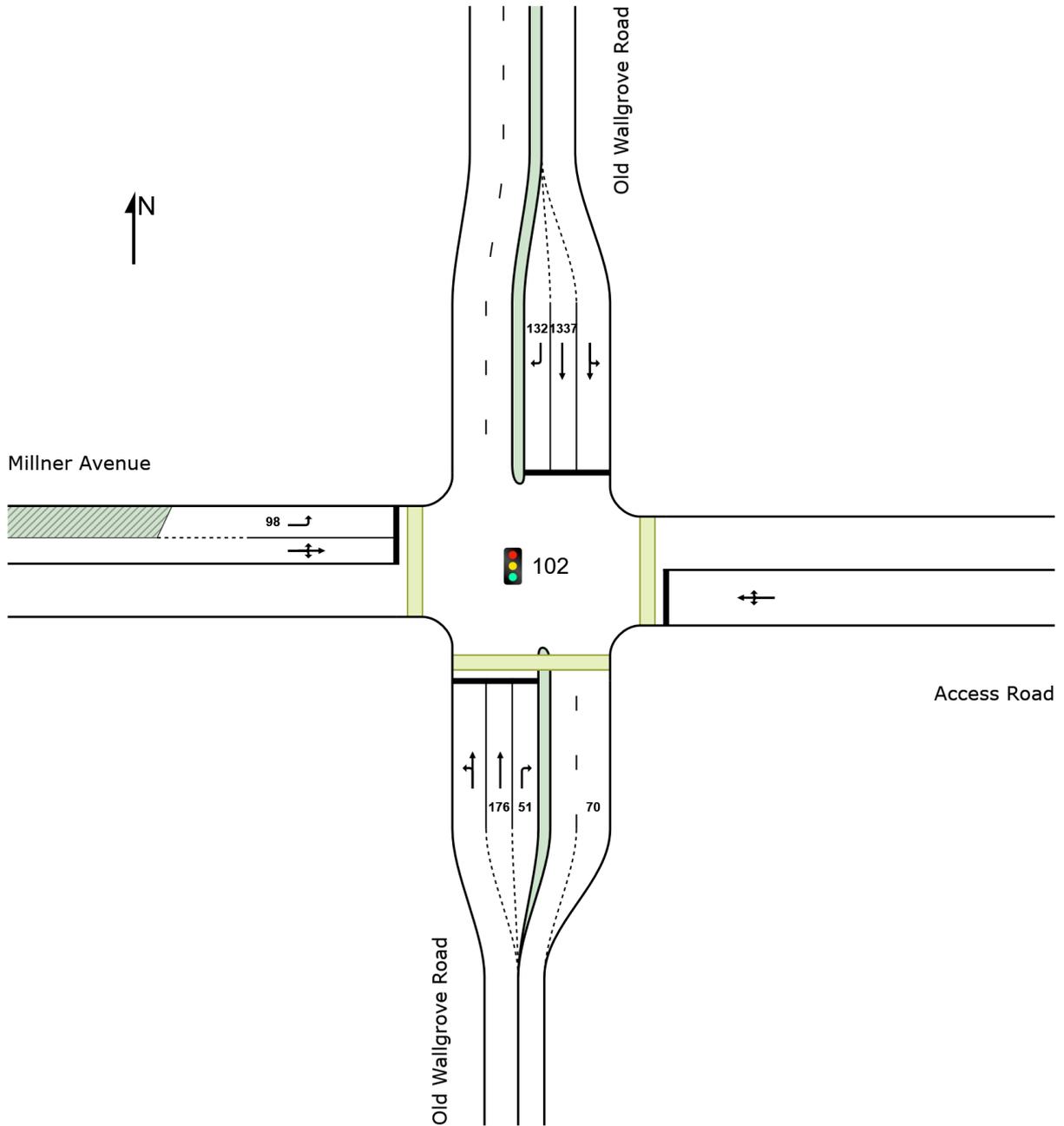


SITE LAYOUT

 Site: 102 [Millner Ave & Old Wallgrove Rd - AM (Site Folder: Existing Scenario 2023)]

Existing Scenario - AM
AM Peak: 7:00 - 8:00am
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.

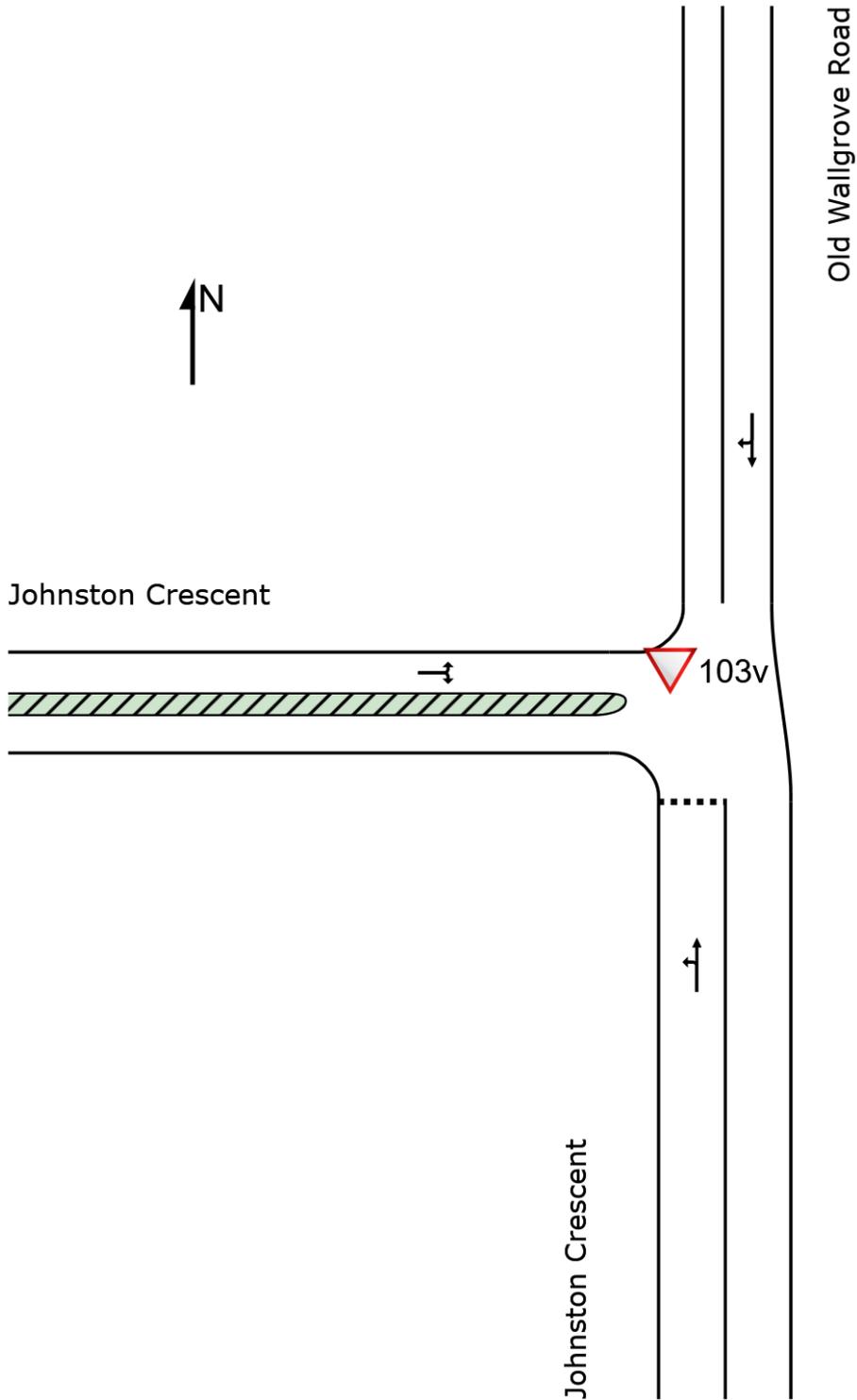


SITE LAYOUT

▼ Site: 103v [Johnston Cres & Old Wallgrove Rd - AM (Site Folder: Existing Scenario 2023)]

Existing Scenario - AM
AM Peak: 7:00 - 8:00am
Site Category: Existing Design
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



MOVEMENT SUMMARY

**Site: 101 [Telopea PI & Old Wallgrove Rd & Lenore Dr - AM
(Site Folder: Existing Scenario 2023)]**

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing Scenario - AM

AM Peak: 7:00 - 8:00am

Site Category: Existing Design

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 111 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh.]	[Dist]				
			veh/h	%	veh/h	%	v/c	sec			veh	m			km/h
South: Old Wallgrove Road															
1	L2	All MCs	51	58.3	51	58.3	0.665	9.4	LOS A	8.5	90.9	0.97	0.85	1.02	46.4
2	T1	All MCs	4	25.0	4	25.0	*0.665	68.1	LOS E	8.5	90.9	0.97	0.85	1.02	46.9
3	R2	All MCs	247	63.4	247	63.4	0.665	64.3	LOS E	8.5	90.9	0.97	0.85	1.03	42.4
Approach			302	62.0	302	62.0	0.665	55.2	LOS D	8.5	90.9	0.97	0.85	1.03	43.2
East: Old Wallgrove Road															
4	L2	All MCs	587	20.4	587	20.4	0.462	10.4	LOS A	8.7	71.3	0.30	0.70	0.30	66.1
5	T1	All MCs	693	18.7	693	18.7	*0.486	24.9	LOS B	13.7	111.6	0.78	0.68	0.78	47.2
6	R2	All MCs	59	3.6	59	3.6	*0.306	49.5	LOS D	2.8	20.0	0.96	0.75	0.96	25.3
Approach			1339	18.8	1339	18.8	0.486	19.7	LOS B	13.7	111.6	0.58	0.69	0.58	56.4
North: Telopea PI															
7	L2	All MCs	35	15.2	35	15.2	0.535	6.1	LOS A	2.7	20.9	1.00	0.76	1.04	20.6
8	T1	All MCs	12	9.1	12	9.1	*0.535	241.9	LOS F	2.7	20.9	1.00	0.76	1.04	42.8
9	R2	All MCs	12	0.0	12	0.0	0.141	64.3	LOS E	0.6	4.5	0.99	0.68	0.99	28.2
Approach			58	10.9	58	10.9	0.535	64.9	LOS E	2.7	20.9	1.00	0.74	1.03	28.0
West: Lenore Drive															
10	L2	All MCs	25	0.0	25	0.0	0.015	7.4	LOS A	0.0	0.3	0.04	0.62	0.04	58.8
11	T1	All MCs	711	27.1	711	27.1	*0.426	18.3	LOS B	10.9	93.6	0.65	0.64	0.65	53.2
12	R2	All MCs	187	16.9	187	16.9	*0.601	46.2	LOS D	7.2	57.4	0.96	0.87	0.96	51.1
Approach			923	24.3	923	24.3	0.601	23.6	LOS B	10.9	93.6	0.69	0.68	0.69	52.5
All Vehicles			2622	25.5	2622	25.5	0.665	26.1	LOS B	13.7	111.6	0.67	0.71	0.68	51.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
						[Ped]	[Dist]					
		ped/h	ped/h	sec		ped	m			sec	m	m/sec
South: Old Wallgrove Road												
P1	Full	1	1	49.7	LOS E	0.0	0.0	0.95	0.95	203.5	200.0	0.98

East: Old Wallgrove Road												
P2	Full	1	1	49.7	LOS E	0.0	0.0	0.95	0.95	203.5	200.0	0.98
North: Telopea PI												
P3	Full	1	1	22.1	LOS C	0.0	0.0	0.89	0.89	175.9	200.0	1.14
West: Lenore Drive												
P4	Full	1	1	49.7	LOS E	0.0	0.0	0.95	0.95	203.5	200.0	0.98
All	Pedestrians	4	4	42.8	LOS E	0.0	0.0	0.93	0.93	196.6	200.0	1.02

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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 Project: P:\2021\2110\211085\Reports\TTW\Traffic\3. CTMP\SIDRA\S4 Traffic Modelling (CTMP).sip9

MOVEMENT SUMMARY

Site: 102 [Millner Ave & Old Wallgrove Rd - AM (Site Folder: Existing Scenario 2023)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing Scenario - AM

AM Peak: 7:00 - 8:00am

Site Category: Existing Design

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 63 seconds (Site User-Given Phase Times)

Vehicle Movement Performance													
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h %	Arrival Flows [Total HV] veh/h %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. Dist] veh m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h	
South: Old Wallgrove Road													
1	L2	All MCs	4 50.0	4 50.0	* 0.086	15.3	LOS B	0.7 6.3	0.79	0.60	0.79	45.2	
2	T1	All MCs	66 39.7	66 39.7	* 0.086	16.9	LOS B	0.8 7.7	0.79	0.60	0.79	66.4	
3	R2	All MCs	2 50.0	2 50.0	0.004	13.5	LOS A	0.0 0.2	0.57	0.62	0.57	40.6	
Approach			73 40.6	73 40.6	0.086	16.7	LOS B	0.8 7.7	0.78	0.60	0.78	65.1	
East: Access Road													
4	L2	All MCs	2 50.0	2 50.0	0.324	18.8	LOS B	0.6 7.8	0.99	0.70	0.99	25.1	
5	T1	All MCs	1 0.0	1 0.0	* 0.324	29.0	LOS C	0.6 7.8	0.99	0.70	0.99	30.9	
6	R2	All MCs	18 100.0	18 100.0	0.324	34.2	LOS C	0.6 7.8	0.99	0.70	0.99	46.6	
Approach			21 90.0	21 90.0	0.324	32.4	LOS C	0.6 7.8	0.99	0.70	0.99	44.7	
North: Old Wallgrove Road													
7	L2	All MCs	13 66.7	37 66.7	0.092	15.8	LOS B	2.4 23.4	0.51	0.56	0.51	61.8	
8	T1	All MCs	148 19.9	224 19.9	0.217	13.8	LOS A	4.7 38.1	0.59	0.51	0.59	71.5	
9	R2	All MCs	576 21.0	626 21.0	* 0.590	15.9	LOS B	10.2 84.4	0.56	0.76	0.56	61.2	
Approach			737 21.6	887 22.7	0.590	15.3	LOS A	10.2 84.4	0.57	0.69	0.57	62.9	
West: Millner Avenue													
10	L2	All MCs	199 65.6	199 65.6	0.151	13.5	LOS A	1.7 18.4	0.55	0.68	0.55	55.1	
11	T1	All MCs	1 0.0	1 0.0	0.151	37.1	LOS C	1.6 17.4	0.58	0.68	0.58	39.3	
12	R2	All MCs	1 100.0	1 100.0	0.151	42.4	LOS C	1.6 17.4	0.58	0.68	0.58	38.7	
Approach			201 65.4	201 65.4	0.151	13.8	LOS A	1.7 18.4	0.55	0.68	0.55	55.0	
All Vehicles			1032 32.9	1182 28.7	0.590	15.2	LOS A	10.2 84.4	0.59	0.69	0.59	60.9	

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Input Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped Dist] ped m	Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed		
		ped/h	sec					sec	m	m/sec		
South: Old Wallgrove Road												

P1 Full	1	1	25.8	LOS C	0.0	0.0	0.90	0.90	179.6	200.0	1.11
East: Access Road											
P2 Full	1	1	25.8	LOS C	0.0	0.0	0.90	0.90	179.6	200.0	1.11
West: Millner Avenue											
P4 Full	1	1	25.8	LOS C	0.0	0.0	0.90	0.90	179.6	200.0	1.11
All Pedestrians	3	3	25.8	LOS C	0.0	0.0	0.90	0.90	179.6	200.0	1.11

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 103v [Johnston Cres & Old Wallgrove Rd - AM (Site Folder: Existing Scenario 2023)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing Scenario - AM
 AM Peak: 7:00 - 8:00am
 Site Category: Existing Design
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh.]	[Dist]				
			veh/h		veh/h		v/c	sec		veh	m				km/h
South: Johnston Crescent															
1	L2	All MCs	1	0.0	1	0.0	0.019	5.6	LOS A	0.1	0.6	0.18	0.50	0.18	52.3
2	T1	All MCs	18	41.2	18	41.2	0.019	5.2	LOS A	0.1	0.6	0.18	0.50	0.18	50.9
Approach			19	38.9	19	38.9	0.019	5.3	LOS A	0.1	0.6	0.18	0.50	0.18	51.0
North: Old Wallgrove Road															
8	T1	All MCs	69	6.1	69	6.1	0.055	0.0	LOS A	0.2	1.4	0.01	0.17	0.01	58.4
9	R2	All MCs	28	25.9	28	25.9	0.055	5.8	LOS A	0.2	1.4	0.01	0.17	0.01	53.2
Approach			98	11.8	98	11.8	0.055	1.7	NA	0.2	1.4	0.01	0.17	0.01	57.0
West: Johnston Crescent															
10	L2	All MCs	16	53.3	16	53.3	0.012	6.2	LOS A	0.0	0.1	0.02	0.56	0.02	47.9
12	R2	All MCs	1	0.0	1	0.0	0.012	5.6	LOS A	0.0	0.1	0.02	0.56	0.02	52.1
Approach			17	50.0	17	50.0	0.012	6.1	NA	0.0	0.1	0.02	0.56	0.02	48.2
All Vehicles			134	20.5	134	20.5	0.055	2.8	NA	0.2	1.4	0.04	0.27	0.04	54.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

**Site: 101 [Telopea PI & Old Wallgrove Rd & Lenore Dr - PM
(Site Folder: Existing Scenario 2023)]**

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing Scenario - PM

PM Peak: 4:15 - 5:15pm

Site Category: Existing Design

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 92 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
South: Old Wallgrove Road															
1	L2	All MCs	280	9.8	280	9.8	0.872	18.3	LOS B	23.3	178.2	1.00	0.97	1.23	48.5
2	T1	All MCs	2100	100.0	2100	100.0	0.872	89.3	LOS F	23.3	178.2	1.00	0.97	1.23	48.4
3	R2	All MCs	645	10.6	645	10.6	*0.872	62.9	LOS E	23.3	178.2	1.00	0.97	1.23	46.2
Approach			927	10.6	927	10.6	0.872	49.5	LOS D	23.3	178.2	1.00	0.97	1.23	47.0
East: Old Wallgrove Road															
4	L2	All MCs	162	70.8	162	70.8	0.147	9.0	LOS A	0.7	8.2	0.15	0.63	0.15	63.3
5	T1	All MCs	627	29.0	627	29.0	*0.430	19.5	LOS B	9.9	86.8	0.74	0.64	0.74	51.9
6	R2	All MCs	616	16.7	616	16.7	*0.176	56.0	LOS D	0.3	2.5	1.00	0.63	1.00	23.4
Approach			796	37.4	796	37.4	0.430	17.6	LOS B	9.9	86.8	0.62	0.64	0.62	55.1
North: Telopea PI															
7	L2	All MCs	18	11.8	103	11.8	0.067	6.3	LOS A	4.9	39.0	0.62	0.62	0.62	39.0
8	T1	All MCs	1100	100.0	6100	100.0	0.067	256.1	LOS F	4.9	39.0	0.62	0.62	0.62	61.3
9	R2	All MCs	11	10.0	11	10.0	*0.567	66.4	LOS E	0.6	4.5	1.00	0.68	1.13	27.0
Approach			29	14.3	119	16.1	0.567	24.2	LOS A	4.9	39.0	0.66	0.63	0.67	33.7
West: Lenore Drive															
10	L2	All MCs	3	33.3	3	33.3	0.002	7.9	LOS A	0.0	0.0	0.00	0.60	0.00	57.2
11	T1	All MCs	414	28.2	414	28.2	*0.257	15.1	LOS B	5.6	49.0	0.63	0.52	0.63	56.3
12	R2	All MCs	42	55.0	42	55.0	0.415	55.8	LOS D	2.0	20.3	0.99	0.74	0.99	46.6
Approach			459	30.7	459	30.7	0.415	18.8	LOS B	5.6	49.0	0.66	0.54	0.66	54.0
All Vehicles			2212	24.5	2302	23.5	0.872	31.4	LOS C	23.3	178.2	0.78	0.76	0.87	49.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Input Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed	
	ped/h	ped/h	sec		[Ped]	[Dist]			sec	m	m/sec	
					ped	m						
South: Old Wallgrove Road												

P1 Full	1	1	40.2	LOS E	0.0	0.0	0.93	0.93	194.0	200.0	1.03
East: Old Wallgrove Road											
P2 Full	1	1	40.2	LOS E	0.0	0.0	0.93	0.93	194.0	200.0	1.03
North: Telopea Pl											
P3 Full	1	1	17.5	LOS B	0.0	0.0	0.87	0.87	171.3	200.0	1.17
West: Lenore Drive											
P4 Full	1	1	40.2	LOS E	0.0	0.0	0.93	0.93	194.0	200.0	1.03
All Pedestrians	4	4	34.5	LOS D	0.0	0.0	0.92	0.92	188.4	200.0	1.06

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 102 [Millner Ave & Old Wallgrove Rd - PM (Site Folder: Existing Scenario 2023)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing Scenario - PM

PM Peak: 4:15 - 5:15pm

Site Category: Existing Design

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 54 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
South: Old Wallgrove Road															
1	L2	All MCs	4	100.0	4	100.0	* 0.167	13.7	LOS A	2.0	15.5	0.72	0.59	0.72	44.5
2	T1	All MCs	220	7.2	220	7.2	* 0.167	13.4	LOS A	2.0	15.5	0.72	0.58	0.72	68.8
3	R2	All MCs	1	0.0	1	0.0	0.001	11.8	LOS A	0.0	0.1	0.53	0.60	0.53	45.9
Approach			225	8.9	225	8.9	0.167	13.4	LOS A	2.0	15.5	0.72	0.58	0.72	68.4
East: Access Road															
4	L2	All MCs	1	100.0	1	100.0	0.100	15.8	LOS B	0.2	1.4	0.97	0.65	0.97	27.4
5	T1	All MCs	1	0.0	1	0.0	* 0.100	21.9	LOS B	0.2	1.4	0.97	0.65	0.97	34.2
6	R2	All MCs	5	20.0	5	20.0	0.100	26.5	LOS B	0.2	1.4	0.97	0.65	0.97	54.3
Approach			7	28.6	7	28.6	0.100	24.3	LOS B	0.2	1.4	0.97	0.65	0.97	49.4
North: Old Wallgrove Road															
7	L2	All MCs	1	100.0	91	100.0	0.129	28.5	LOS B	5.8	75.0	0.44	0.71	0.44	61.5
8	T1	All MCs	21	35.0	21	35.0	0.028	6.4	LOS A	0.3	2.8	0.56	0.49	0.56	72.5
9	R2	All MCs	180	72.5	180	72.5	* 0.284	13.2	LOS A	2.1	23.7	0.53	0.72	0.53	60.3
Approach			202	68.8	292	78.4	0.284	17.6	LOS A	5.8	75.0	0.51	0.69	0.51	61.2
West: Millner Avenue															
10	L2	All MCs	559	13.0	559	13.0	0.374	15.8	LOS B	5.3	41.3	0.72	0.76	0.72	57.0
11	T1	All MCs	1	0.0	1	0.0	0.374	27.8	LOS B	4.9	38.6	0.72	0.76	0.72	38.1
12	R2	All MCs	4	75.0	4	75.0	0.374	32.9	LOS C	4.9	38.6	0.72	0.76	0.72	36.2
Approach			564	13.4	564	13.4	0.374	16.0	LOS B	5.3	41.3	0.72	0.76	0.72	56.9
All Vehicles			999	23.7	1089	21.7	0.374	14.7	LOS A	5.8	75.0	0.66	0.70	0.66	59.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Input Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
	ped/h	ped/h	sec		[Ped]	[Dist]			sec	m	m/sec
					ped	m					

South: Old Wallgrove Road												
P1	Full	1	1	21.3	LOS C	0.0	0.0	0.89	0.89	175.2	200.0	1.14
East: Access Road												
P2	Full	1	1	21.3	LOS C	0.0	0.0	0.89	0.89	175.2	200.0	1.14
West: Millner Avenue												
P4	Full	1	1	21.3	LOS C	0.0	0.0	0.89	0.89	175.2	200.0	1.14
All Pedestrians		3	3	21.3	LOS C	0.0	0.0	0.89	0.89	175.2	200.0	1.14

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 103v [Johnston Cres & Old Wallgrove Rd - PM (Site Folder: Existing Scenario 2023)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing Scenario - PM
 PM Peak: 4:15 - 5:15pm
 Site Category: Existing Design
 Give-Way (Two-Way)

Vehicle Movement Performance													
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h %	Arrival Flows [Total HV] veh/h %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. Dist] veh m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h	
South: Johnston Crescent													
1	L2	All MCs	100.0	100.0	0.087	6.8	LOSA	0.3 2.5	0.16	0.50	0.16	48.2	
2	T1	All MCs	102 10.3	102 10.3	0.087	4.8	LOSA	0.3 2.5	0.16	0.50	0.16	52.3	
Approach			103 11.2	103 11.2	0.087	4.8	LOSA	0.3 2.5	0.16	0.50	0.16	52.2	
North: Old Wallgrove Road													
8	T1	All MCs	9 22.2	9 22.2	0.011	0.0	LOSA	0.0 0.4	0.01	0.26	0.01	58.1	
9	R2	All MCs	7 57.1	7 57.1	0.011	6.2	LOSA	0.0 0.4	0.01	0.26	0.01	51.1	
Approach			17 37.5	17 37.5	0.011	2.7	NA	0.0 0.4	0.01	0.26	0.01	55.0	
West: Johnston Crescent													
10	L2	All MCs	52 12.2	52 12.2	0.030	5.7	LOSA	0.0 0.0	0.00	0.57	0.00	50.0	
12	R2	All MCs	1 0.0	1 0.0	0.030	5.6	LOSA	0.0 0.0	0.00	0.57	0.00	52.1	
Approach			53 12.0	53 12.0	0.030	5.7	NA	0.0 0.0	0.00	0.57	0.00	50.1	
All Vehicles			173 14.0	173 14.0	0.087	4.9	NA	0.3 2.5	0.10	0.50	0.10	51.9	

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

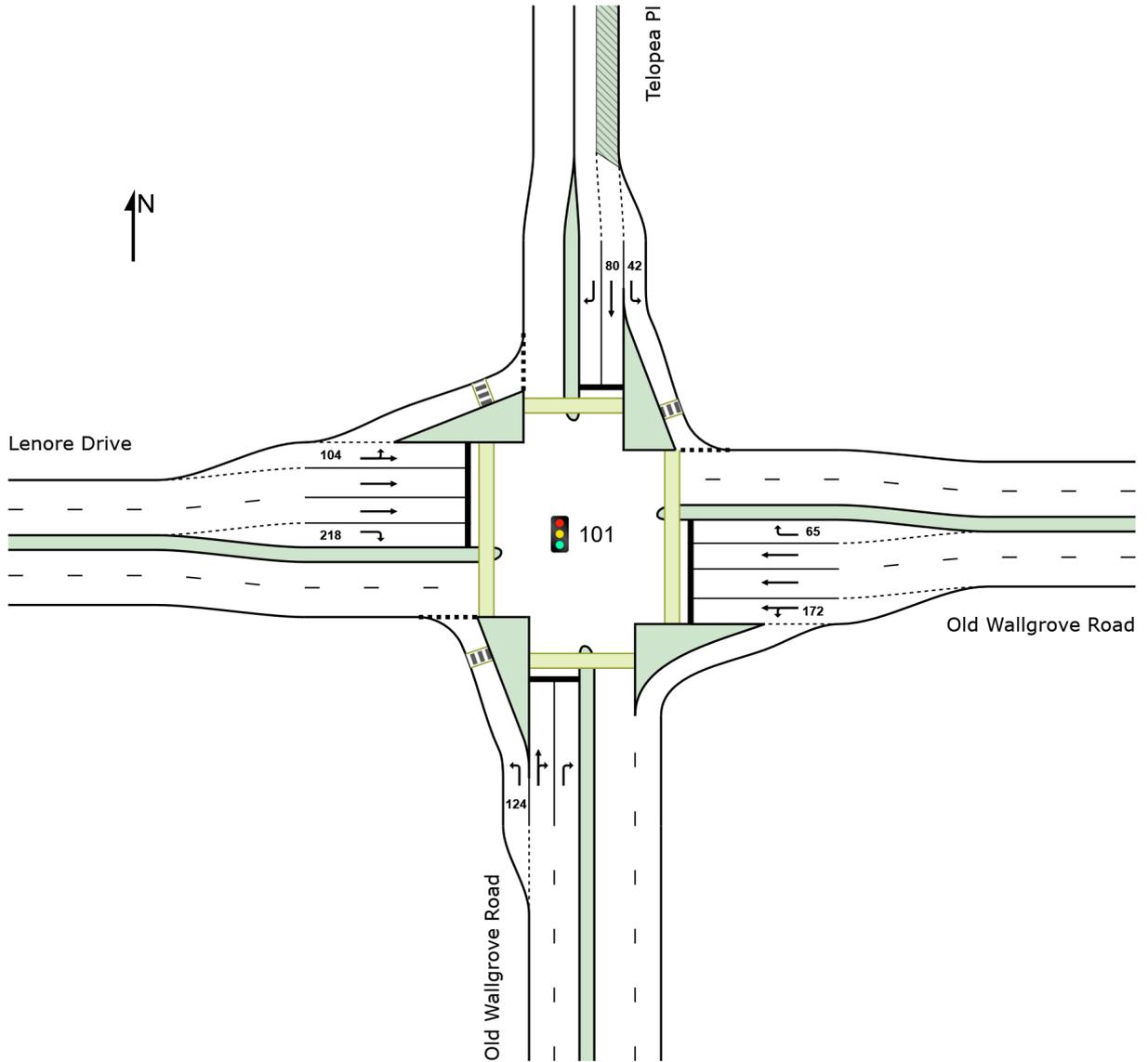
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SITE LAYOUT

Site: 101 [Telopea PI & Old Wallgrove Rd & Lenore Dr - AM - Approved Upgrades (Site Folder: 2026)]

2026 Scenario - AM
AM Peak: 7:00 - 8:00am
Site Category: Future Conditions 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.

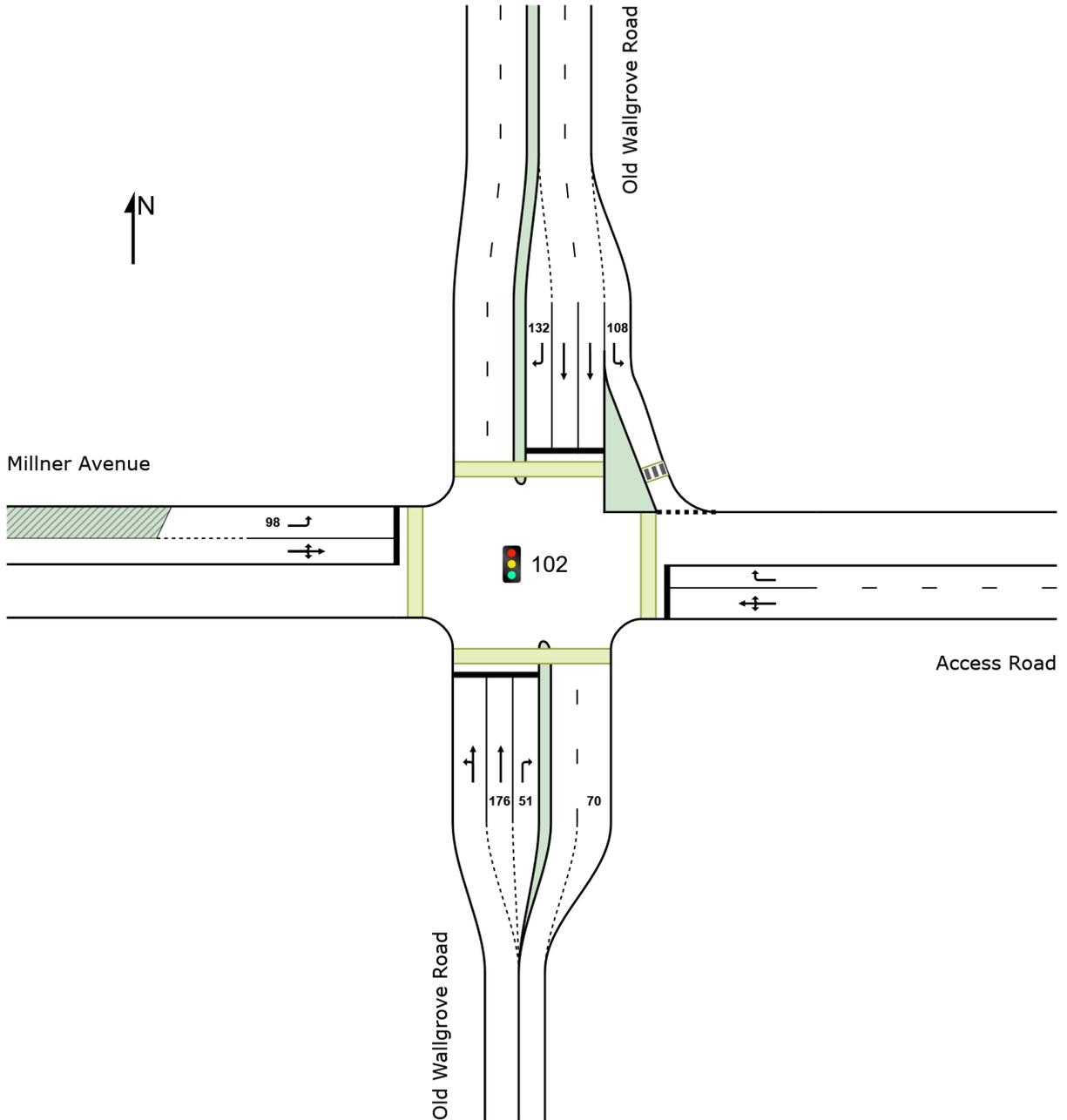


SITE LAYOUT

 Site: 102 [Millner Ave & Old Wallgrove Rd - AM - Approved Upgrades (Site Folder: 2026)]

2026 Scenario - AM
AM Peak: 7:00 - 8:00am
Site Category: Future Conditions 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.

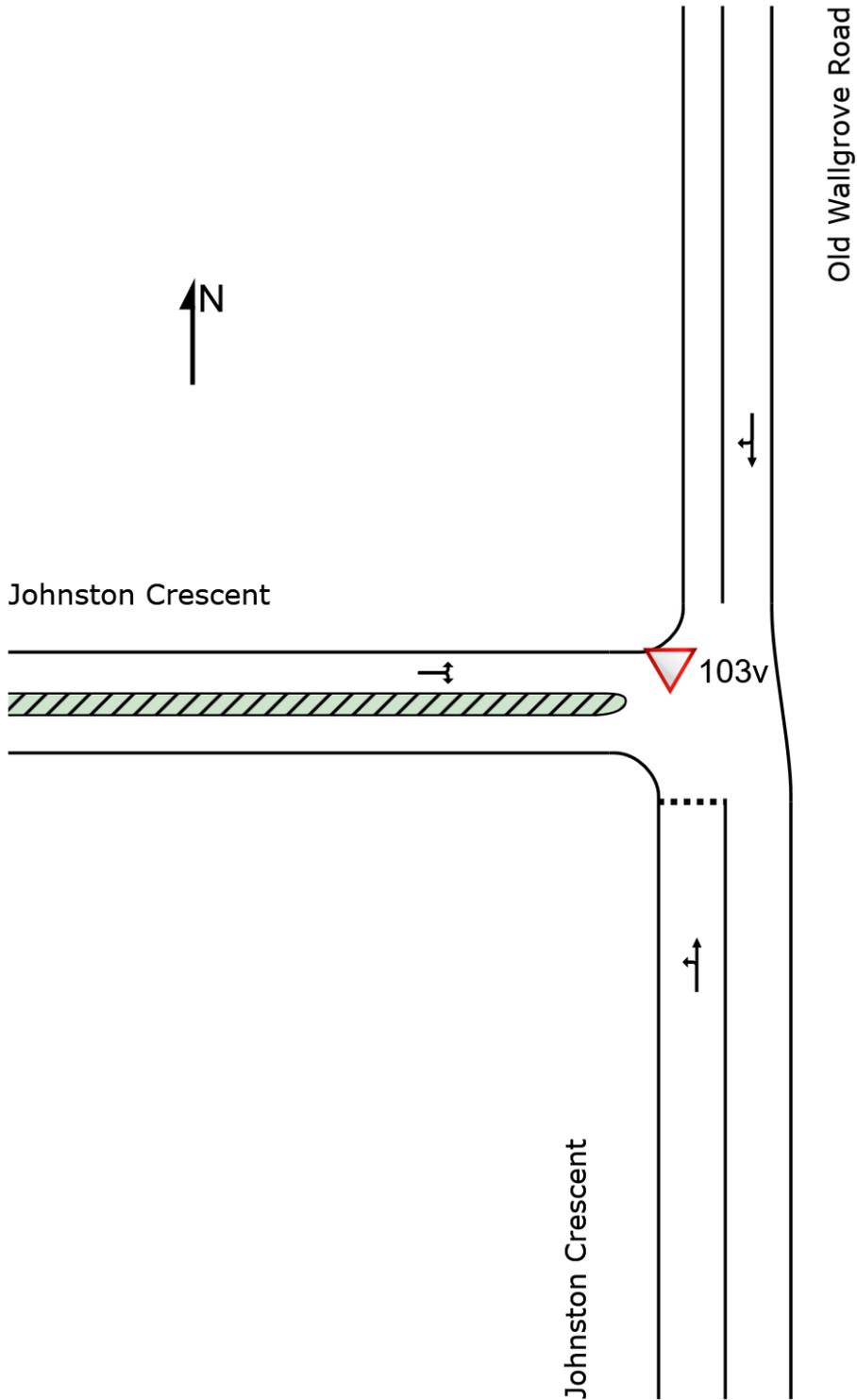


SITE LAYOUT

▼ Site: 103v [Johnston Cres & Old Wallgrove Rd - AM (Site Folder: 2026)]

2026 Scenario - AM
AM Peak: 7:00 - 8:00am
Site Category: Future Conditions 1
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



MOVEMENT SUMMARY

Site: 101 [Telopea PI & Old Wallgrove Rd & Lenore Dr - AM - Approved Upgrades (Site Folder: 2026)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

2026 Scenario - AM

AM Peak: 7:00 - 8:00am

Site Category: Future Conditions 1

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 80 seconds (Site Practical Cycle Time)

Design Life Analysis (Final Year): Results for 3 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist]				
South: Old Wallgrove Road															
1	L2	All MCs	54	58.3	54	58.3	0.045	8.4	LOS A	0.1	1.1	0.05	0.61	0.05	65.2
2	T1	All MCs	4	25.0	4	25.0	* 0.918	57.6	LOS E ¹¹	6.7	72.0	1.00	1.08	1.68	43.9
3	R2	All MCs	262	63.4	262	63.4	0.918	63.7	LOS E ¹¹	6.7	72.0	1.00	1.08	1.68	40.2
Approach			320	62.0	320	62.0	0.918	54.3	LOS D ¹¹	6.7	72.0	0.84	1.00	1.41	43.5
East: Old Wallgrove Road															
4	L2	All MCs	623	20.4	623	20.4	0.380	7.9	LOS A	0.0	0.0	0.00	0.59	0.00	68.1
5	T1	All MCs	734	18.7	734	18.7	* 0.869	41.1	LOS C	16.6	134.9	1.00	1.02	1.29	37.5
6	R2	All MCs	62	3.6	62	3.6	* 0.252	28.3	LOS B	1.7	12.0	0.93	0.74	0.93	34.1
Approach			1419	18.8	1419	18.8	0.869	26.0	LOS B	16.6	134.9	0.56	0.82	0.71	52.2
North: Telopea PI															
7	L2	All MCs	37	15.2	37	15.2	0.020	5.9	LOS A	0.1	0.6	0.05	0.55	0.05	48.9
8	T1	All MCs	12	9.1	12	9.1	* 0.135	42.6	LOS D ¹¹	0.5	3.8	0.98	0.66	0.98	50.1
9	R2	All MCs	12	0.0	12	0.0	0.134	48.1	LOS D ¹¹	0.5	3.5	0.98	0.67	0.98	32.9
Approach			61	10.9	61	10.9	0.135	21.7	LOS B	0.5	3.8	0.43	0.60	0.43	45.0
West: Lenore Drive															
10	L2	All MCs	27	0.0	27	0.0	0.015	7.4	LOS A	0.1	0.4	0.05	0.62	0.05	58.7
11	T1	All MCs	753	27.1	753	27.1	* 0.433	9.7	LOS A	8.0	69.0	0.67	0.55	0.67	63.0
12	R2	All MCs	199	16.9	199	16.9	* 0.309	17.4	LOS B	3.2	25.5	0.73	0.76	0.73	64.0
Approach			979	24.3	979	24.3	0.433	11.2	LOS A	8.0	69.0	0.66	0.59	0.66	63.3
All Vehicles			2779	25.5	2779	25.5	0.918	24.0	LOS B	16.6	134.9	0.62	0.76	0.77	53.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Input Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
						[Ped	Dist]					
South: Old Wallgrove Road												

P1 Full	1	1	34.2	LOS D	0.0	0.0	0.93	0.93	188.1	200.0	1.06
East: Old Wallgrove Road											
P2 Full	1	1	34.2	LOS D	0.0	0.0	0.93	0.93	188.1	200.0	1.06
North: Telopea Pl											
P3 Full	1	1	15.3	LOS B	0.0	0.0	0.85	0.85	169.1	200.0	1.18
West: Lenore Drive											
P4 Full	1	1	34.2	LOS D	0.0	0.0	0.93	0.93	188.1	200.0	1.06
All Pedestrians	4	4	29.5	LOS C	0.0	0.0	0.91	0.91	183.3	200.0	1.09

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 102 [Millner Ave & Old Wallgrove Rd - AM - Approved Upgrades (Site Folder: 2026)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

2026 Scenario - AM

AM Peak: 7:00 - 8:00am

Site Category: Future Conditions 1

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 50 seconds (Site Practical Cycle Time)

Design Life Analysis (Final Year): Results for 3 years

Vehicle Movement Performance													
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h %	Arrival Flows [Total HV] veh/h %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. Dist] veh m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h	
South: Old Wallgrove Road													
1	L2	All MCs	4 50.0	4 50.0	* 0.164	16.3	LOS B	0.7 6.3	0.91	0.68	0.91	44.6	
2	T1	All MCs	70 39.7	70 39.7	* 0.164	18.4	LOS B	0.8 7.8	0.91	0.67	0.91	65.4	
3	R2	All MCs	2 50.0	2 50.0	0.008	18.1	LOS B	0.0 0.3	0.82	0.62	0.82	36.9	
Approach			77 40.6	77 40.6	0.164	18.3	LOS B	0.8 7.8	0.91	0.67	0.91	64.1	
East: Access Road													
4	L2	All MCs	2 50.0	2 50.0	0.212	21.7	LOS B	0.3 3.9	0.98	0.68	0.98	26.8	
5	T1	All MCs	1 0.0	1 0.0	* 0.212	24.1	LOS B	0.3 3.9	0.98	0.68	0.98	32.7	
6	R2	All MCs	19 100.0	19 100.0	0.212	32.5	LOS C	0.3 3.9	0.98	0.67	0.98	47.0	
Approach			22 90.0	22 90.0	0.212	31.0	LOS C	0.3 3.9	0.98	0.67	0.98	45.3	
North: Old Wallgrove Road													
7	L2	All MCs	13 66.7	63 66.7	0.057	10.8	LOS A	1.1 12.6	0.19	0.62	0.19	63.1	
8	T1	All MCs	157 19.9	207 19.9	0.139	5.4	LOS A	1.6 13.4	0.45	0.37	0.45	75.7	
9	R2	All MCs	610 21.0	660 21.0	* 0.620	16.2	LOS B	10.0 82.9	0.64	0.78	0.64	61.1	
Approach			781 21.6	931 23.9	0.620	13.4	LOS A	10.0 82.9	0.57	0.68	0.57	63.4	
West: Millner Avenue													
10	L2	All MCs	211 65.6	211 65.6	0.144	10.3	LOS A	1.2 13.6	0.49	0.66	0.49	56.4	
11	T1	All MCs	1 0.0	1 0.0	0.144	32.8	LOS C	1.2 13.4	0.52	0.67	0.52	41.4	
12	R2	All MCs	1 100.0	1 100.0	0.144	38.1	LOS C	1.2 13.4	0.52	0.67	0.52	40.3	
Approach			213 65.4	213 65.4	0.144	10.6	LOS A	1.2 13.6	0.49	0.66	0.49	56.3	
All Vehicles			1093 32.9	1243 28.9	0.620	13.5	LOS A	10.0 82.9	0.58	0.69	0.58	61.5	

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Input Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped Dist] ped m	Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed	
	ped/h	ped/h	sec					sec	m	m/sec	

South: Old Wallgrove Road												
P1	Full	1	1	19.4	LOS B	0.0	0.0	0.88	0.88	173.2	200.0	1.15
East: Access Road												
P2	Full	1	1	19.4	LOS B	0.0	0.0	0.88	0.88	173.2	200.0	1.15
North: Old Wallgrove Road												
P3	Full	1	1	19.4	LOS B	0.0	0.0	0.88	0.88	173.2	200.0	1.15
West: Millner Avenue												
P4	Full	1	1	19.4	LOS B	0.0	0.0	0.88	0.88	173.2	200.0	1.15
All Pedestrians		4	4	19.4	LOS B	0.0	0.0	0.88	0.88	173.2	200.0	1.15

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 103v [Johnston Cres & Old Wallgrove Rd - AM (Site Folder: 2026)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

2026 Scenario - AM
 AM Peak: 7:00 - 8:00am
 Site Category: Future Conditions 1
 Give-Way (Two-Way)
 Design Life Analysis (Final Year): Results for 3 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh.]	[Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				
South: Johnston Crescent															
1	L2	All MCs	1	0.0	1	0.0	0.020	5.6	LOS A	0.1	0.7	0.19	0.50	0.19	52.3
2	T1	All MCs	19	41.2	19	41.2	0.020	5.3	LOS A	0.1	0.7	0.19	0.50	0.19	50.9
Approach			20	38.9	20	38.9	0.020	5.3	LOS A	0.1	0.7	0.19	0.50	0.19	50.9
North: Old Wallgrove Road															
8	T1	All MCs	74	6.1	74	6.1	0.058	0.0	LOS A	0.2	1.4	0.01	0.17	0.01	58.4
9	R2	All MCs	30	25.9	30	25.9	0.058	5.8	LOS A	0.2	1.4	0.01	0.17	0.01	53.2
Approach			104	11.8	104	11.8	0.058	1.7	NA	0.2	1.4	0.01	0.17	0.01	57.0
West: Johnston Crescent															
10	L2	All MCs	17	53.3	17	53.3	0.013	6.2	LOS A	0.0	0.1	0.02	0.56	0.02	47.9
12	R2	All MCs	1	0.0	1	0.0	0.013	5.6	LOS A	0.0	0.1	0.02	0.56	0.02	52.1
Approach			18	50.0	18	50.0	0.013	6.1	NA	0.0	0.1	0.02	0.56	0.02	48.2
All Vehicles			142	20.5	142	20.5	0.058	2.8	NA	0.2	1.4	0.04	0.27	0.04	54.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

**Site: 101 [Telopea PI & Old Wallgrove Rd & Lenore Dr - PM
Approved Upgrades (Site Folder: 2026)]**

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

2026 Scenario - PM

PM Peak: 4:15 - 5:15pm

Site Category: Future Conditions 1

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 50 seconds (Site Practical Cycle Time)

Design Life Analysis (Final Year): Results for 3 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh]	[Dist]				km/h
			veh/h		veh/h					veh	m				
South: Old Wallgrove Road															
1	L2	All MCs	297	9.8	297	9.8	0.203	7.7	LOS A	0.7	5.4	0.10	0.63	0.10	66.5
2	T1	All MCs	2100		2100		0.825	28.3	LOS B	9.6	73.5	1.00	0.98	1.33	54.7
3	R2	All MCs	684	10.6	684	10.6	*0.825	33.1	LOS C	9.6	73.5	1.00	0.98	1.33	52.9
Approach			983	10.6	983	10.6	0.825	25.4	LOS B	9.6	73.5	0.73	0.87	0.96	56.8
East: Old Wallgrove Road															
4	L2	All MCs	172	70.8	172	70.8	0.138	8.6	LOS A	0.0	0.0	0.00	0.57	0.00	64.2
5	T1	All MCs	665	29.0	665	29.0	*0.825	25.6	LOS B	9.4	82.5	1.00	0.99	1.34	46.9
6	R2	All MCs	716	7	716	7	*0.101	27.6	LOS B	0.2	1.2	0.98	0.64	0.98	34.3
Approach			844	37.4	844	37.4	0.825	22.2	LOS B	9.4	82.5	0.80	0.90	1.06	51.8
North: Telopea PI															
7	L2	All MCs	19	11.8	109	11.8	0.059	8.2	LOS A	2.1	16.1	0.11	0.57	0.11	49.1
8	T1	All MCs	1100		1100		0.048	32.5	LOS C	0.0	0.4	1.00	0.58	1.00	53.6
9	R2	All MCs	11	10.0	11	10.0	*0.327	38.4	LOS C	0.3	2.6	1.00	0.66	1.00	35.4
Approach			31	14.3	121	12.4	0.327	11.2	LOS A	2.1	16.1	0.20	0.58	0.20	42.4
West: Lenore Drive															
10	L2	All MCs	3	33.3	3	33.3	0.002	7.9	LOS A	0.0	0.0	0.00	0.60	0.00	57.2
11	T1	All MCs	439	28.2	439	28.2	*0.361	10.8	LOS A	3.8	33.2	0.77	0.59	0.77	61.3
12	R2	All MCs	51	60.9	51	60.9	0.220	28.6	LOS C	1.2	12.3	0.89	0.74	0.89	56.2
Approach			493	31.7	493	31.7	0.361	12.7	LOS A	3.8	33.2	0.78	0.61	0.78	60.1
All Vehicles			2351	24.7	2441	23.8	0.825	21.5	LOS B	9.6	82.5	0.74	0.82	0.92	55.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Input Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
	ped/h	ped/h	sec		[Ped ped]	[Dist]			sec	m	m/sec
					ped	m					

South: Old Wallgrove Road												
P1	Full	1	1	19.4	LOS B	0.0	0.0	0.88	0.88	173.2	200.0	1.15
East: Old Wallgrove Road												
P2	Full	1	1	19.4	LOS B	0.0	0.0	0.88	0.88	173.2	200.0	1.15
North: Telopea Pl												
P3	Full	1	1	9.2	LOS A	0.0	0.0	0.76	0.76	163.1	200.0	1.23
West: Lenore Drive												
P4	Full	1	1	19.4	LOS B	0.0	0.0	0.88	0.88	173.2	200.0	1.15
All Pedestrians		4	4	16.8	LOS B	0.0	0.0	0.85	0.85	170.7	200.0	1.17

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 102 [Millner Ave & Old Wallgrove Rd - PM Approved Upgrades (Site Folder: 2026)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

2026 Scenario - PM

PM Peak: 4:15 - 5:15pm

Site Category: Future Conditions 1

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 30 seconds (Site Practical Cycle Time)

Design Life Analysis (Final Year): Results for 3 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	[Dist]				
South: Old Wallgrove Road															
1	L2	All MCs	4	100.0	4	100.0	* 0.266	13.3	LOS A	1.5	11.3	0.85	0.68	0.85	45.8
2	T1	All MCs	233	7.2	233	7.2	* 0.266	11.1	LOS A	1.5	11.3	0.85	0.68	0.85	70.4
3	R2	All MCs	1	0.0	1	0.0	0.002	11.4	LOS A	0.0	0.1	0.64	0.60	0.64	45.9
Approach			239	8.9	239	8.9	0.266	11.2	LOS A	1.5	11.3	0.85	0.68	0.85	70.0
East: Access Road															
4	L2	All MCs	1	100.0	1	100.0	0.056	11.1	LOS A	0.1	0.6	0.96	0.62	0.96	31.7
5	T1	All MCs	1	0.0	1	0.0	* 0.056	12.7	LOS A	0.1	0.6	0.96	0.62	0.96	39.1
6	R2	All MCs	6	20.0	6	20.0	0.056	20.4	LOS B	0.1	0.6	0.97	0.61	0.97	56.9
Approach			8	28.6	8	28.6	0.056	18.0	LOS B	0.1	0.6	0.97	0.61	0.97	52.8
North: Old Wallgrove Road															
7	L2	All MCs	1	100.0	91	100.0	0.098	18.6	LOS B	3.9	51.0	0.37	0.64	0.37	63.7
8	T1	All MCs	22	35.0	22	35.0	0.033	8.3	LOS A	0.2	1.5	0.73	0.50	0.73	72.7
9	R2	All MCs	191	72.5	191	72.5	* 0.335	13.4	LOS A	1.7	19.7	0.70	0.75	0.70	60.1
Approach			214	68.8	304	78.0	0.335	14.6	LOS A	3.9	51.0	0.60	0.70	0.60	61.1
West: Millner Avenue															
10	L2	All MCs	592	13.0	592	13.0	0.402	11.2	LOS A	3.3	25.6	0.73	0.75	0.73	59.2
11	T1	All MCs	1	0.0	1	0.0	0.402	16.3	LOS B	3.0	23.8	0.73	0.75	0.73	41.1
12	R2	All MCs	4	75.0	4	75.0	0.402	21.3	LOS B	3.0	23.8	0.73	0.75	0.73	38.3
Approach			598	13.4	598	13.4	0.402	11.3	LOS A	3.3	25.6	0.73	0.75	0.73	59.0
All Vehicles			1059	23.7	1149	21.9	0.402	11.6	LOS A	3.9	51.0	0.72	0.73	0.72	61.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
						[Ped	[Dist]					

		ped/h	ped/h	sec		ped	m			sec	m	m/sec
South: Old Wallgrove Road												
P1	Full	1	1	9.6	LOS A	0.0	0.0	0.80	0.80	163.4	200.0	1.22
East: Access Road												
P2	Full	1	1	9.6	LOS A	0.0	0.0	0.80	0.80	163.4	200.0	1.22
North: Old Wallgrove Road												
P3	Full	1	1	9.6	LOS A	0.0	0.0	0.80	0.80	163.4	200.0	1.22
West: Millner Avenue												
P4	Full	1	1	9.6	LOS A	0.0	0.0	0.80	0.80	163.4	200.0	1.22
All	Pedestrians	4	4	9.6	LOS A	0.0	0.0	0.80	0.80	163.4	200.0	1.22

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 103v [Johnston Cres & Old Wallgrove Rd - PM (Site Folder: 2026)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

2026 Scenario - PM
 PM Peak: 4:15 - 5:15pm
 Site Category: Future Conditions 1
 Give-Way (Two-Way)
 Design Life Analysis (Final Year): Results for 3 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist]				km/h
			veh/h		veh/h					veh	m				
South: Johnston Crescent															
1	L2	All MCs	100	0	100	0	0.093	6.8	LOS A	0.3	2.7	0.17	0.50	0.17	48.2
2	T1	All MCs	108	10.3	108	10.3	0.093	4.8	LOS A	0.3	2.7	0.17	0.50	0.17	52.3
Approach			109	11.2	109	11.2	0.093	4.8	LOS A	0.3	2.7	0.17	0.50	0.17	52.2
North: Old Wallgrove Road															
8	T1	All MCs	10	22.2	10	22.2	0.012	0.0	LOS A	0.0	0.4	0.01	0.26	0.01	58.1
9	R2	All MCs	8	57.1	8	57.1	0.012	6.2	LOS A	0.0	0.4	0.01	0.26	0.01	51.0
Approach			18	37.5	18	37.5	0.012	2.7	NA	0.0	0.4	0.01	0.26	0.01	55.0
West: Johnston Crescent															
10	L2	All MCs	55	12.2	55	12.2	0.032	5.7	LOS A	0.0	0.0	0.00	0.57	0.00	50.0
12	R2	All MCs	1	0.0	1	0.0	0.032	5.6	LOS A	0.0	0.0	0.00	0.57	0.00	52.1
Approach			56	12.0	56	12.0	0.032	5.7	NA	0.0	0.0	0.00	0.57	0.00	50.1
All Vehicles			183	14.0	183	14.0	0.093	4.9	NA	0.3	2.7	0.10	0.50	0.10	51.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

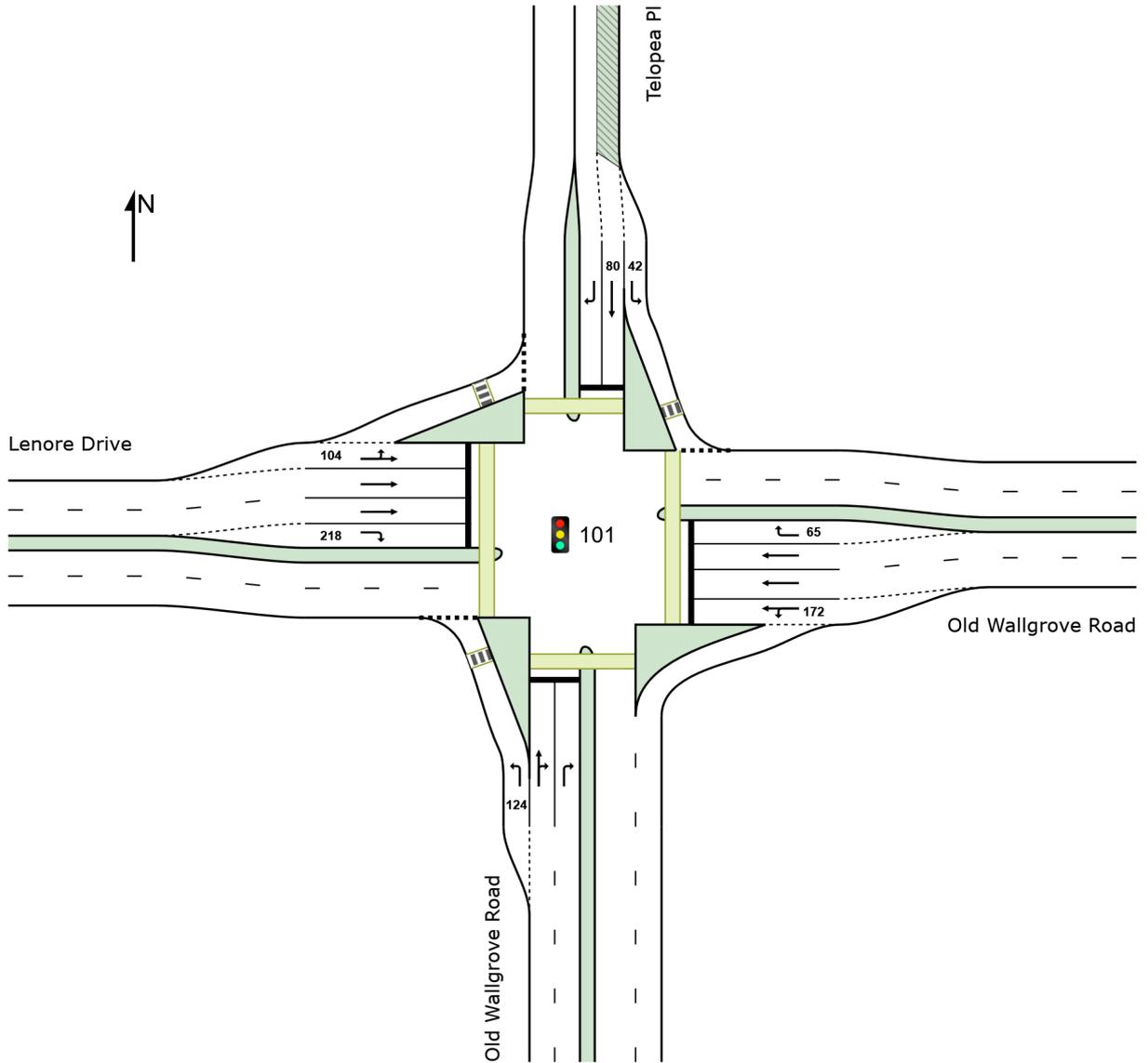
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SITE LAYOUT

Site: 101 [Telopea PI & Old Wallgrove Rd & Lenore Dr - AM
(Site Folder: 2026+Construction)]

2026+Construction Scenario - AM
AM Peak: 7:00 - 8:00am
Site Category: Future Conditions 2
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.

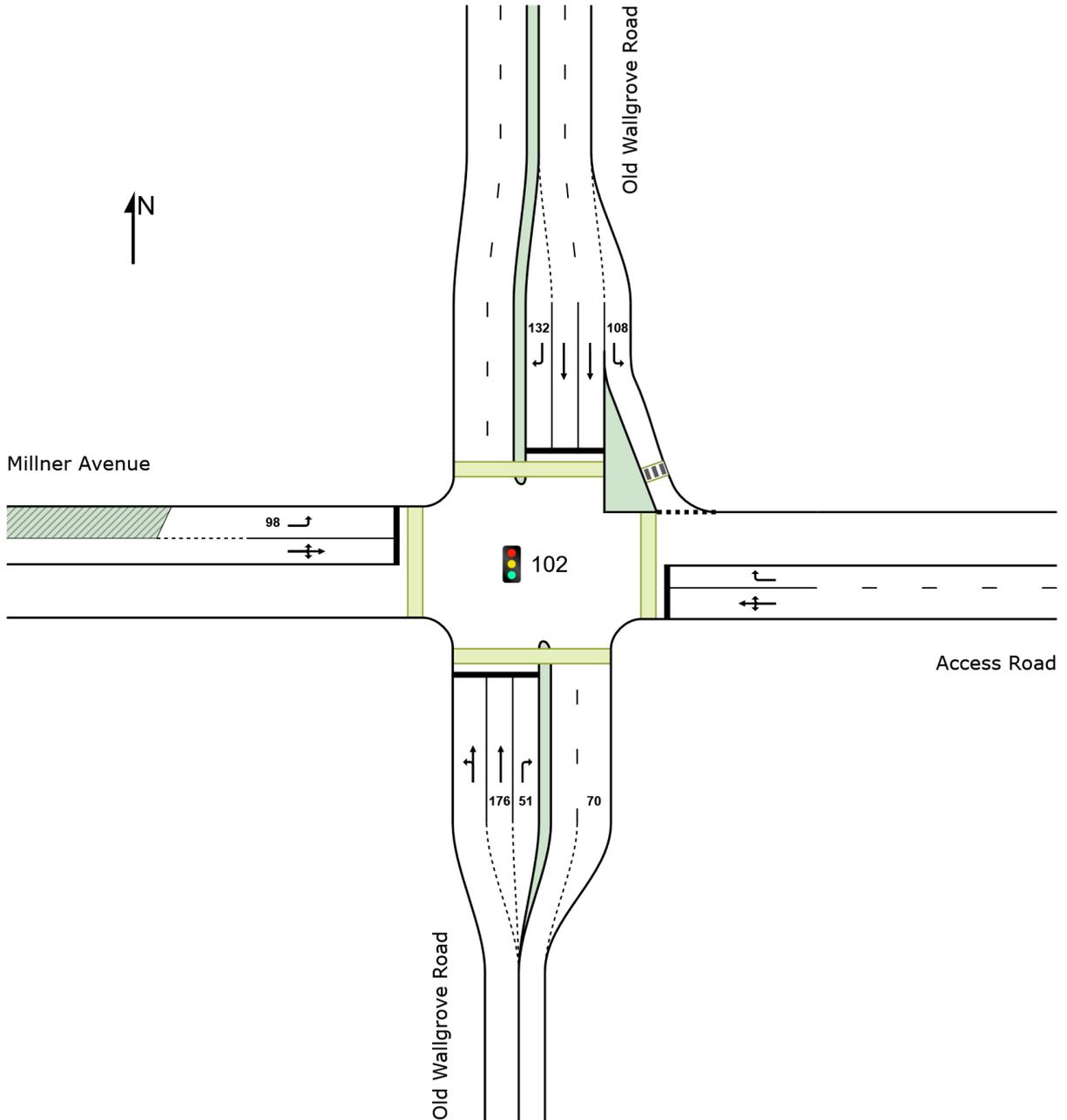


SITE LAYOUT

 Site: 102 [Millner Ave & Old Wallgrove Rd - AM (Site Folder: 2026+Construction)]

2026+construction Scenario - AM
AM Peak: 7:00 - 8:00am
Site Category: Future Conditions 2
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.

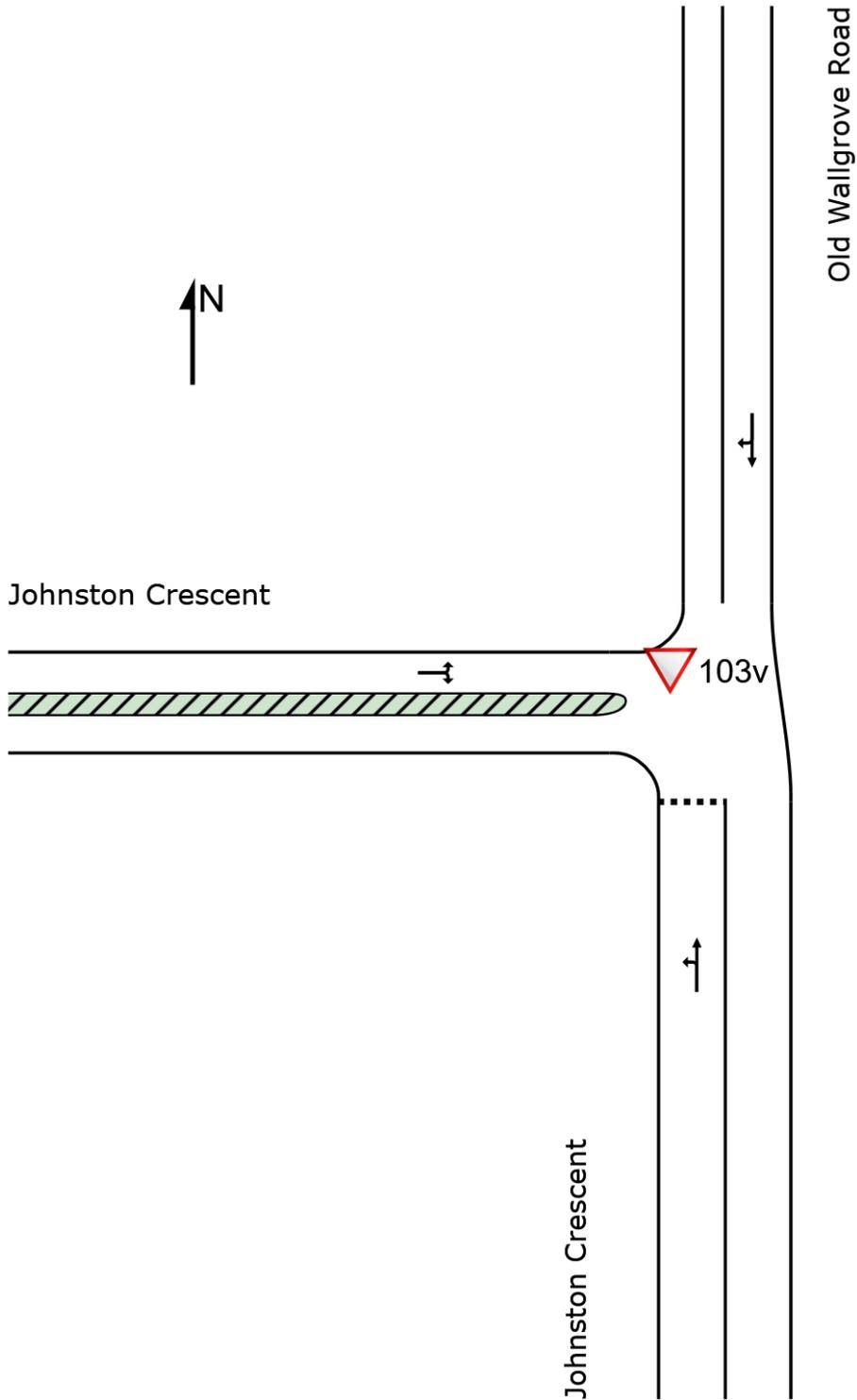


SITE LAYOUT

▼ Site: 103v [Johnston Cres & Old Wallgrove Rd - AM (Site Folder: 2026+Construction)]

2026+construction Scenario - AM
AM Peak: 7:00 - 8:00am
Site Category: Future Conditions 2
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



MOVEMENT SUMMARY

**Site: 101 [Telopea PI & Old Wallgrove Rd & Lenore Dr - AM
(Site Folder: 2026+Construction)]**

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

2026+Construction Scenario - AM

AM Peak: 7:00 - 8:00am

Site Category: Future Conditions 2

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site Practical Cycle Time)

Design Life Analysis (Final Year): Results for 3 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh.]	[Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Old Wallgrove Road															
1	L2	All MCs	54	58.3	54	58.3	0.045	8.4	LOS A	0.1	1.1	0.04	0.60	0.04	65.2
2	T1	All MCs	4	25.0	4	25.0	* 0.929	70.4	LOS E ¹¹	8.9	96.3	1.00	1.09	1.59	40.2
3	R2	All MCs	280	65.7	280	65.7	0.929	76.4	LOS F ¹¹	8.9	96.4	1.00	1.08	1.59	36.9
Approach			338	64.0	338	64.0	0.929	65.5	LOS E ¹¹	8.9	96.4	0.85	1.01	1.35	40.1
East: Old Wallgrove Road															
4	L2	All MCs	857	16.9	857	16.9	0.512	7.3	LOS A	0.0	0.0	0.00	0.57	0.00	64.2
5	T1	All MCs	734	18.7	734	18.7	* 0.870	52.0	LOS D ¹¹	20.4	165.8	1.00	1.01	1.24	33.9
6	R2	All MCs	62	3.6	62	3.6	* 0.267	40.3	LOS C	2.1	15.5	0.94	0.74	0.94	31.0
Approach			1654	17.2	1654	17.2	0.870	28.4	LOS B	20.4	165.8	0.48	0.77	0.58	49.8
North: Telopea PI															
7	L2	All MCs	37	15.2	37	15.2	0.020	5.9	LOS A	0.1	0.6	0.04	0.55	0.04	49.0
8	T1	All MCs	12	9.1	12	9.1	* 0.169	54.3	LOS D ¹¹	0.6	4.8	0.99	0.67	0.99	46.0
9	R2	All MCs	12	0.0	12	0.0	0.168	59.9	LOS E ¹¹	0.6	4.4	0.99	0.68	0.99	29.3
Approach			61	10.9	61	10.9	0.169	26.4	LOS B	0.6	4.8	0.42	0.60	0.42	42.2
West: Lenore Drive															
10	L2	All MCs	27	0.0	27	0.0	0.015	7.4	LOS A	0.1	0.4	0.04	0.62	0.04	58.8
11	T1	All MCs	753	27.1	753	27.1	* 0.396	9.3	LOS A	8.6	74.6	0.60	0.52	0.60	63.7
12	R2	All MCs	415	8.1	415	8.1	* 0.550	18.6	LOS B	8.7	64.7	0.80	0.81	0.80	57.3
Approach			1195	19.9	1195	19.9	0.550	12.5	LOS A	8.7	74.6	0.66	0.62	0.66	59.8
All Vehicles			3248	22.9	3248	22.9	0.929	26.4	LOS B	20.4	165.8	0.58	0.74	0.69	50.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Input Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped]	[Dist]					
	ped/h	ped/h	sec		ped	m			sec	m	m/sec
South: Old Wallgrove Road											

P1 Full	1	1	44.2	LOS E ¹²	0.0	0.0	0.94	0.94	198.0	200.0	1.01
East: Old Wallgrove Road											
P2 Full	1	1	44.2	LOS E ¹²	0.0	0.0	0.94	0.94	198.0	200.0	1.01
North: Telopea Pl											
P3 Full	1	1	19.6	LOS B	0.0	0.0	0.88	0.88	173.5	200.0	1.15
West: Lenore Drive											
P4 Full	1	1	44.2	LOS E ¹²	0.0	0.0	0.94	0.94	198.0	200.0	1.01
All Pedestrians	4	4	38.0	LOS D	0.0	0.0	0.93	0.93	191.9	200.0	1.04

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

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MOVEMENT SUMMARY

Site: 102 [Millner Ave & Old Wallgrove Rd - AM (Site Folder: 2026+Construction)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

2026+construction Scenario - AM

AM Peak: 7:00 - 8:00am

Site Category: Future Conditions 2

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 50 seconds (Site Practical Cycle Time)

Design Life Analysis (Final Year): Results for 3 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh.]	[Dist]				
			veh/h	%	veh/h	%	v/c	sec			veh	m			km/h
South: Old Wallgrove Road															
1	L2	All MCs	4	50.0	4	50.0	* 0.216	18.1	LOS B	0.9	9.5	0.92	0.70	0.92	42.3
2	T1	All MCs	88	51.9	88	51.9	* 0.216	20.5	LOS B	1.0	10.6	0.92	0.70	0.92	61.6
3	R2	All MCs	2	50.0	2	50.0	0.009	18.1	LOS B	0.0	0.3	0.82	0.62	0.82	36.8
Approach			95	51.8	95	51.8	0.216	20.3	LOS B	1.0	10.6	0.92	0.70	0.92	60.6
East: Access Road															
4	L2	All MCs	2	50.0	2	50.0	0.212	22.5	LOS B	0.3	3.9	0.98	0.68	0.98	26.8
5	T1	All MCs	1	0.0	1	0.0	* 0.212	24.1	LOS B	0.3	3.9	0.98	0.68	0.98	32.7
6	R2	All MCs	19	100.0	19	100.0	0.212	32.5	LOS C	0.3	3.9	0.98	0.67	0.98	47.0
Approach			22	90.0	22	90.0	0.212	31.1	LOS C	0.3	3.9	0.98	0.67	0.98	45.3
North: Old Wallgrove Road															
7	L2	All MCs	13	66.7	63	66.7	0.057	10.8	LOS A	1.1	12.6	0.19	0.62	0.19	63.1
8	T1	All MCs	609	8.1	659	8.1	0.413	7.1	LOS A	6.1	45.5	0.54	0.52	0.54	61.7
9	R2	All MCs	610	21.0	660	21.0	* 0.623	16.3	LOS B	10.1	83.1	0.64	0.78	0.64	61.1
Approach			1233	15.1	1383	16.9	0.623	11.7	LOS A	10.1	83.1	0.57	0.65	0.57	61.4
West: Millner Avenue															
10	L2	All MCs	211	65.6	211	65.6	0.144	10.3	LOS A	1.2	13.6	0.49	0.66	0.49	56.4
11	T1	All MCs	1	0.0	1	0.0	0.144	32.8	LOS C	1.2	13.4	0.52	0.67	0.52	41.4
12	R2	All MCs	1	100.0	1	100.0	0.144	38.1	LOS C	1.2	13.4	0.52	0.67	0.52	40.3
Approach			213	65.4	213	65.4	0.144	10.6	LOS A	1.2	13.6	0.49	0.66	0.49	56.3
All Vehicles			1563	25.3	1713	23.1	0.623	12.1	LOS A	10.1	83.1	0.59	0.66	0.59	60.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
						[Ped]	[Dist]					
		ped/h	ped/h	sec		ped	m			sec	m	m/sec

South: Old Wallgrove Road												
P1	Full	1	1	19.4	LOS B	0.0	0.0	0.88	0.88	173.2	200.0	1.15
East: Access Road												
P2	Full	1	1	19.4	LOS B	0.0	0.0	0.88	0.88	173.2	200.0	1.15
North: Old Wallgrove Road												
P3	Full	1	1	19.4	LOS B	0.0	0.0	0.88	0.88	173.2	200.0	1.15
West: Millner Avenue												
P4	Full	1	1	19.4	LOS B	0.0	0.0	0.88	0.88	173.2	200.0	1.15
All Pedestrians		4	4	19.4	LOS B	0.0	0.0	0.88	0.88	173.2	200.0	1.15

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 103v [Johnston Cres & Old Wallgrove Rd - AM (Site Folder: 2026+Construction)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

2026+construction Scenario - AM
 AM Peak: 7:00 - 8:00am
 Site Category: Future Conditions 2
 Give-Way (Two-Way)
 Design Life Analysis (Final Year): Results for 3 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh.]	[Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				
South: Johnston Crescent															
1	L2	All MCs	1	0.0	1	0.0	0.059	5.6	LOSA	0.2	2.3	0.41	0.60	0.41	50.7
2	T1	All MCs	37	69.7	37	69.7	0.059	7.9	LOSA	0.2	2.3	0.41	0.60	0.41	48.2
Approach			38	67.6	38	67.6	0.059	7.8	LOSA	0.2	2.3	0.41	0.60	0.41	48.3
North: Old Wallgrove Road															
8	T1	All MCs	526	4.2	526	4.2	0.283	0.0	LOSA	0.3	2.0	0.00	0.03	0.00	59.7
9	R2	All MCs	30	25.9	30	25.9	0.283	5.8	LOSA	0.3	2.0	0.00	0.03	0.00	54.4
Approach			556	5.4	556	5.4	0.283	0.3	NA	0.3	2.0	0.00	0.03	0.00	59.4
West: Johnston Crescent															
10	L2	All MCs	17	53.3	17	53.3	0.013	6.3	LOSA	0.0	0.1	0.07	0.58	0.07	47.7
12	R2	All MCs	1	0.0	1	0.0	0.013	7.6	LOSA	0.0	0.1	0.07	0.58	0.07	51.9
Approach			18	50.0	18	50.0	0.013	6.4	NA	0.0	0.1	0.07	0.58	0.07	48.0
All Vehicles			611	10.6	611	10.6	0.283	1.0	NA	0.3	2.3	0.03	0.08	0.03	58.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

**Site: 101 [Telopea PI & Old Wallgrove Rd & Lenore Dr - PM
(Site Folder: 2026+Construction)]**

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

2026+construction Scenario - PM

PM Peak: 4:15 - 5:15pm

Site Category: Future Conditions 2

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site Practical Cycle Time)

Design Life Analysis (Final Year): Results for 3 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh.]	[Dist]				
			veh/h	%	veh/h	%	v/c	sec			veh	m			km/h
South: Old Wallgrove Road															
1	L2	All MCs	427	6.8	427	6.8	0.291	7.2	LOS A	1.1	8.4	0.10	0.62	0.10	63.6
2	T1	All MCs	2 100.		2 100.		0.862	31.8	LOS C	17.2	130.0	1.00	1.00	1.30	50.9
			0		0										
3	R2	All MCs	1005	9.0	1005	9.0	* 0.862	36.1	LOS C	17.2	130.0	1.00	1.00	1.30	49.2
Approach			1435	8.5	1435	8.5	0.862	27.5	LOS B	17.2	130.0	0.73	0.89	0.94	53.2
East: Old Wallgrove Road															
4	L2	All MCs	190	73.5	190	73.5	0.154	8.4	LOS A	0.0	0.0	0.00	0.56	0.00	62.9
5	T1	All MCs	665	29.0	665	29.0	* 0.914	39.6	LOS C	13.0	113.3	1.00	1.13	1.58	38.2
6	R2	All MCs	7	16.7	7	16.7	* 0.122	32.9	LOS C	0.2	1.5	0.99	0.64	0.99	31.6
Approach			861	38.7	861	38.7	0.914	32.7	LOS C	13.0	113.3	0.78	1.00	1.23	44.9
North: Telopea PI															
7	L2	All MCs	19	11.8	109	11.8	0.059	8.1	LOS A	2.1	16.1	0.09	0.57	0.09	49.2
8	T1	All MCs	1 100.		1 100.		0.058	39.2	LOS C	0.0	0.5	1.00	0.58	1.00	50.7
			0		0										
9	R2	All MCs	11	10.0	11	10.0	* 0.392	45.2	LOS D ¹¹	0.4	3.1	1.00	0.67	1.06	32.9
Approach			31	14.3	121	12.4	0.392	11.8	LOS A	2.1	16.1	0.18	0.58	0.19	40.6
West: Lenore Drive															
10	L2	All MCs	3	33.3	3	33.3	0.002	7.9	LOS A	0.0	0.0	0.00	0.60	0.00	57.2
11	T1	All MCs	439	28.2	439	28.2	* 0.390	14.7	LOS B	4.9	42.3	0.81	0.63	0.81	56.8
12	R2	All MCs	51	60.9	51	60.9	0.238	33.3	LOS C	1.4	14.9	0.90	0.75	0.90	54.2
Approach			493	31.7	493	31.7	0.390	16.6	LOS B	4.9	42.3	0.81	0.64	0.81	56.2
All Vehicles			2821	21.8	2911	21.2	0.914	27.1	LOS B	17.2	130.0	0.74	0.87	0.97	51.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Input Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped]	[Dist]					

		ped/h	ped/h	sec		ped	m			sec	m	m/sec
South: Old Wallgrove Road												
P1	Full	1	1	24.3	LOS C	0.0	0.0	0.90	0.90	178.1	200.0	1.12
East: Old Wallgrove Road												
P2	Full	1	1	24.3	LOS C	0.0	0.0	0.90	0.90	178.1	200.0	1.12
North: Telopea Pl												
P3	Full	1	1	12.9	LOS B	0.0	0.0	0.80	0.80	166.7	200.0	1.20
West: Lenore Drive												
P4	Full	1	1	24.3	LOS C	0.0	0.0	0.90	0.90	178.1	200.0	1.12
All	Pedestrians	4	4	21.4	LOS C	0.0	0.0	0.88	0.88	175.3	200.0	1.14

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 102 [Millner Ave & Old Wallgrove Rd - PM (Site Folder: 2026+Construction)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

2026+construction Scenario - PM

PM Peak: 4:15 - 5:15pm

Site Category: Future Conditions 2

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 40 seconds (Site Practical Cycle Time)

Design Life Analysis (Final Year): Results for 3 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh. veh]	[Dist]				
			veh/h	%	veh/h	%	v/c	sec			m				km/h
South: Old Wallgrove Road															
1	L2	All MCs	4	100.0	4	100.0	* 0.472	12.6	LOS A	5.4	39.7	0.81	0.69	0.81	43.9
2	T1	All MCs	685	5.0	685	5.0	* 0.472	11.1	LOS A	5.4	39.7	0.81	0.69	0.81	60.1
3	R2	All MCs	1	0.0	1	0.0	0.001	11.2	LOS A	0.0	0.1	0.53	0.60	0.53	46.2
Approach			691	5.7	691	5.7	0.472	11.2	LOS A	5.4	39.7	0.81	0.69	0.81	60.0
East: Access Road															
4	L2	All MCs	1	100.0	1	100.0	0.075	14.3	LOS A	0.1	0.8	0.97	0.62	0.97	29.5
5	T1	All MCs	1	0.0	1	0.0	* 0.075	17.6	LOS B	0.1	0.8	0.97	0.62	0.97	36.6
6	R2	All MCs	6	20.0	6	20.0	0.075	26.3	LOS B	0.1	0.8	0.98	0.61	0.98	54.0
Approach			8	28.6	8	28.6	0.075	23.3	LOS B	0.1	0.8	0.98	0.62	0.98	49.9
North: Old Wallgrove Road															
7	L2	All MCs	1	100.0	91	100.0	0.102	19.4	LOS B	4.2	54.0	0.33	0.64	0.33	63.9
8	T1	All MCs	40	63.9	40	63.9	0.048	8.4	LOS A	0.3	3.6	0.61	0.49	0.61	65.4
9	R2	All MCs	191	72.5	191	72.5	* 0.435	14.0	LOS A	2.0	22.5	0.73	0.76	0.73	59.9
Approach			232	71.2	322	79.2	0.435	14.9	LOS A	4.2	54.0	0.60	0.69	0.60	60.7
West: Millner Avenue															
10	L2	All MCs	592	13.0	592	13.0	0.464	15.2	LOS B	4.8	37.3	0.80	0.78	0.80	57.3
11	T1	All MCs	1	0.0	1	0.0	0.464	20.5	LOS B	4.4	34.8	0.80	0.78	0.80	38.6
12	R2	All MCs	4	75.0	4	75.0	0.464	25.6	LOS B	4.4	34.8	0.80	0.78	0.80	36.6
Approach			598	13.4	598	13.4	0.464	15.3	LOS B	4.8	37.3	0.80	0.78	0.80	57.2
All Vehicles			1529	18.8	1619	17.7	0.472	13.1	LOS A	5.4	54.0	0.76	0.73	0.76	58.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
						[Ped]	[Dist]					

		ped/h	ped/h	sec		ped	m			sec	m	m/sec
South: Old Wallgrove Road												
P1	Full	1	1	14.5	LOS B	0.0	0.0	0.85	0.85	168.3	200.0	1.19
East: Access Road												
P2	Full	1	1	14.5	LOS B	0.0	0.0	0.85	0.85	168.3	200.0	1.19
North: Old Wallgrove Road												
P3	Full	1	1	14.5	LOS B	0.0	0.0	0.85	0.85	168.3	200.0	1.19
West: Millner Avenue												
P4	Full	1	1	14.5	LOS B	0.0	0.0	0.85	0.85	168.3	200.0	1.19
All	Pedestrians	4	4	14.5	LOS B	0.0	0.0	0.85	0.85	168.3	200.0	1.19

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 103v [Johnston Cres & Old Wallgrove Rd - PM (Site Folder: 2026+Construction)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

2026+construction Scenario - PM

PM Peak: 4:15 - 5:15pm

Site Category: Future Conditions 2

Give-Way (Two-Way)

Design Life Analysis (Final Year): Results for 3 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Veh.]	[Dist]									
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Johnston Crescent															
1	L2	All MCs	100.0		100.0		0.469	6.8	LOS A	2.7	19.8	0.28	0.51	0.28	47.8
2	T1	All MCs	560	5.2	560	5.2	0.469	5.0	LOS A	2.7	19.8	0.28	0.51	0.28	52.1
Approach			561	5.4	561	5.4	0.469	5.0	LOS A	2.7	19.8	0.28	0.51	0.28	52.1
North: Old Wallgrove Road															
8	T1	All MCs	2872.0		2872.0		0.025	0.0	LOS A	0.1	0.6	0.01	0.13	0.01	58.1
9	R2	All MCs	857.1		857.1		0.025	6.2	LOS A	0.1	0.6	0.01	0.13	0.01	51.1
Approach			3668.8		3668.8		0.025	1.4	NA	0.1	0.6	0.01	0.13	0.01	56.6
West: Johnston Crescent															
10	L2	All MCs	5512.2		5512.2		0.032	5.7	LOS A	0.0	0.1	0.01	0.57	0.01	50.0
12	R2	All MCs	10.0		10.0		0.032	5.6	LOS A	0.0	0.1	0.01	0.57	0.01	52.1
Approach			5612.0		5612.0		0.032	5.7	NA	0.0	0.1	0.01	0.57	0.01	50.1
All Vehicles			653	9.4	653	9.4	0.469	4.9	NA	2.7	19.8	0.24	0.49	0.24	52.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

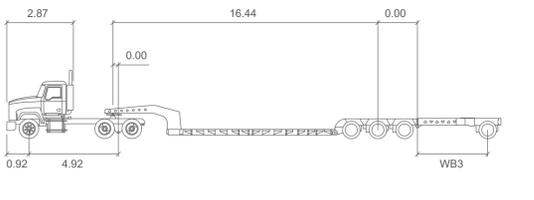
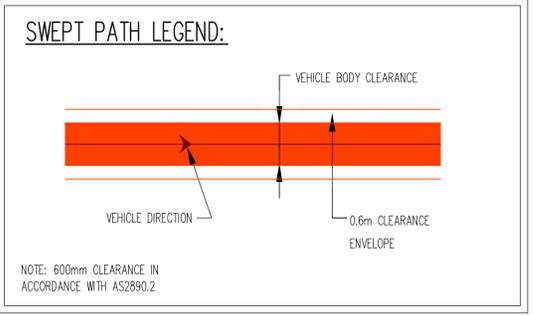
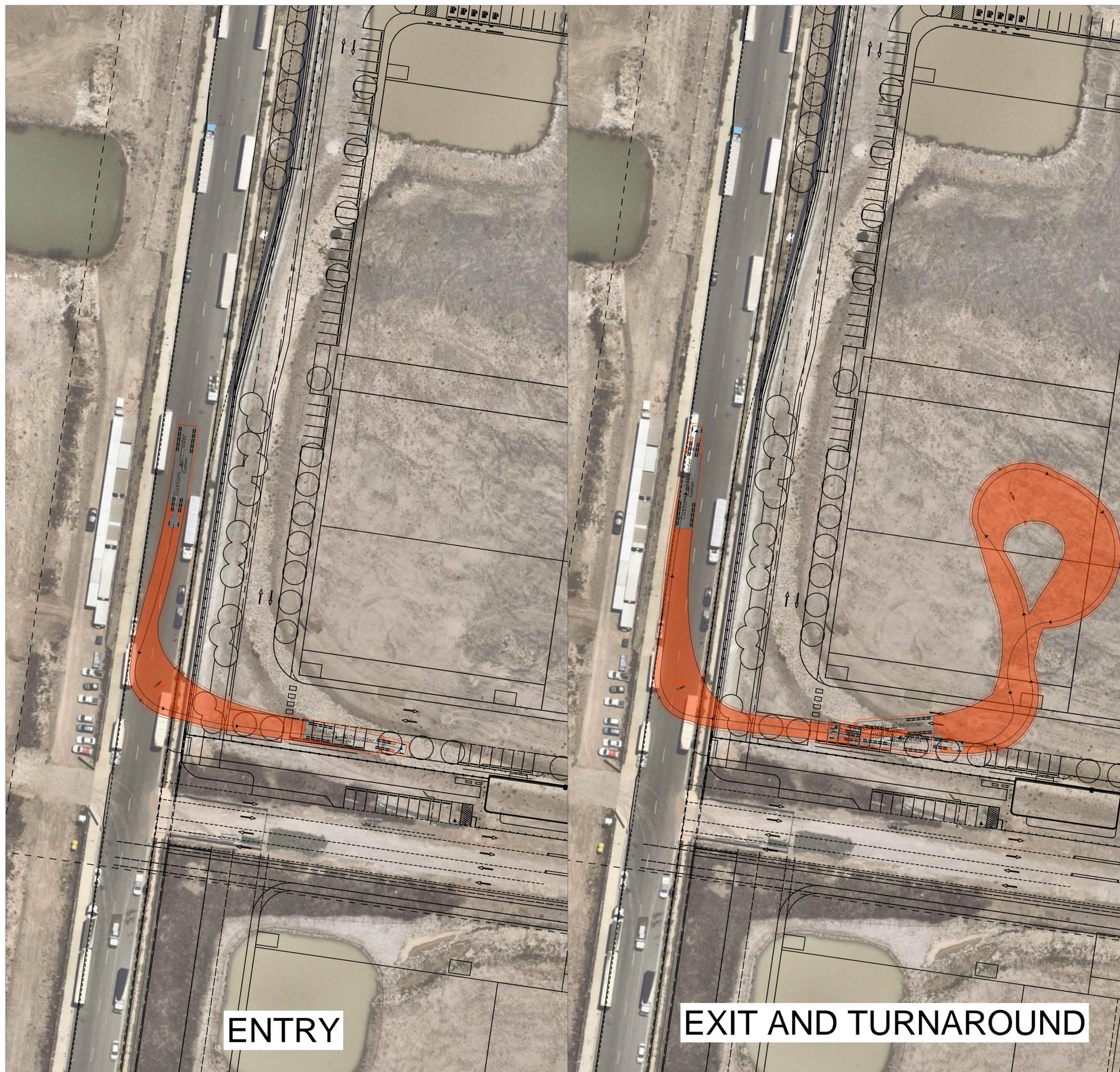
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Appendix F – Swept Path Analysis



Custom_12-axle trailer

	metres		
First Unit Width	: 2.49	Lock to Lock Time	: 6.0
Trailer Width	: 4.60	Steering Angle	: 25.8
First Unit Track	: 2.59	Articulating Angle	: 70.0
Trailer Track	: 4.27		

19/01/26	CC-1	CTMP	MP	SS	GC
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NOTE:

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- ENSURE COORDINATION WITH OTHER TRADES ON SITE
- ASL = ABOVE SLAB LEVEL

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 Document Author Project Number
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Key Plan:

Site:	S4	Stage:	01	Phase:	01
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NEXTDC Project Number:
 S4.0002

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Project Name:
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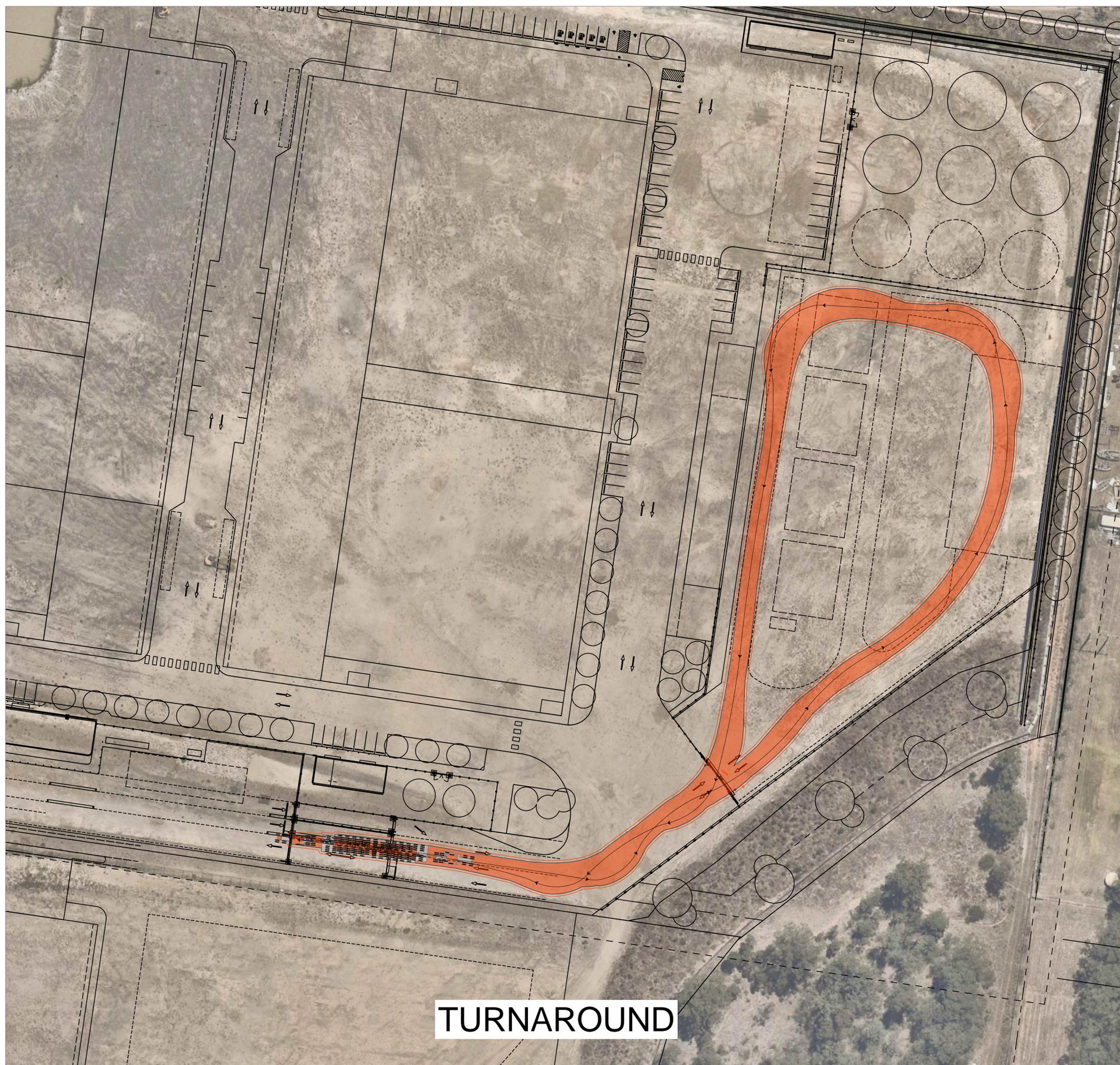
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 CONSTRUCTION
 SWEPT PATH-
 WIDE LOADER SITE
 MOVEMENTS

Drawing Status:
 SPATIAL COORDINATION
 NOT FOR CONSTRUCTION

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Checked	SS	Date	19/01/26

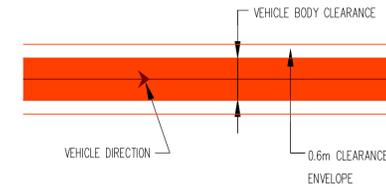
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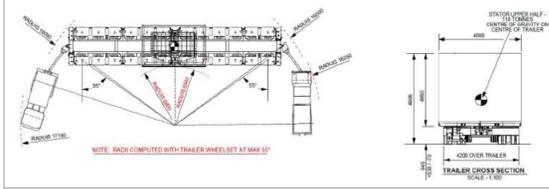
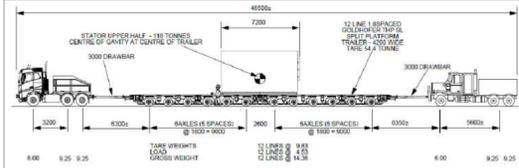


TURNAROUND

SWEPT PATH LEGEND:



NOTE: 600mm CLEARANCE IN ACCORDANCE WITH AS2890.2



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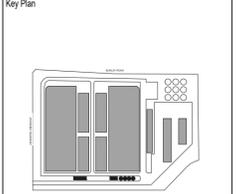
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Project Name
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Drawing Title
 CONSTRUCTION SWEEP PATH
 116 TONNE SUBSTATION
 TRANSFORMER DELIVERY
 VEHICLE
 TURNAROUND

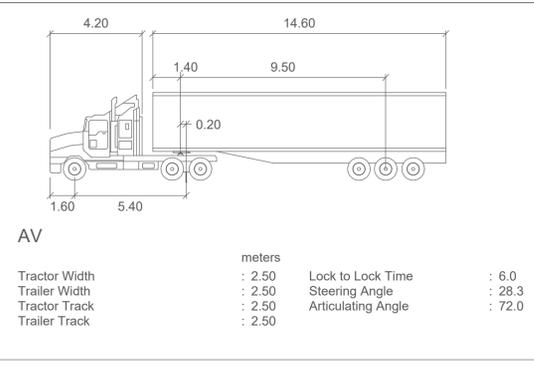
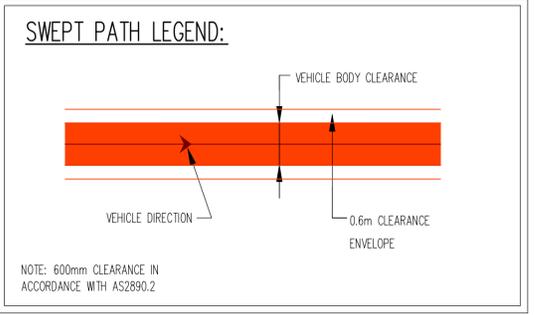
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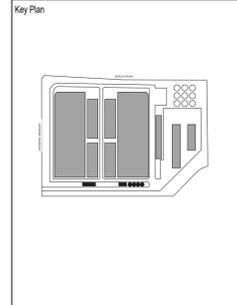
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Drawing Title
 CONSTRUCTION
 SWEEP PATH-
 WORK ZONE - 20m
 ARTICULATED VEHICLE
 MOVEMENTS

Drawing Status
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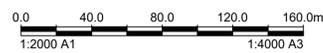
14.3 Appendix 3: Erosion and Sediment Control Plan

NEXTDC DATA CENTRE - S4

16 JOHNSTON CRESCENT, HORSLEY PARK, NSW 2175 AUSTRALIA
STATE SIGNIFICANT DEVELOPMENT APPLICATION (SSDA)



LOCALITY PLAN



DATE	No.	REVISION HISTORY	DRW	CHK	QA
30.04.2025	CNC-3	SSDA SUBMISSION	ES	CG	CG
31.03.2025	CNC-2	SSDA SUBMISSION	ES	CG	CG
25.03.2024	CNC-1	INITIAL RELEASE	JH	CG	CG

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 2. DO NOT SCALE FROM DRAWINGS
 3. CONFIRM ALL MEASUREMENTS ON SITE
 4. CHECK ON SITE PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES
 5. ENSURE COORDINATION WITH OTHER TRADES ON SITE
 6. ASL = ABOVE SLAB LEVEL

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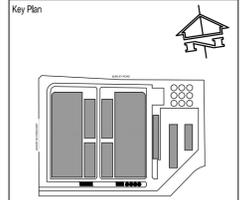
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Project Address
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HORSLEY PARK, NSW 2175**

Project Name
NEXTDC S4

Drawing Title
**GENERAL
COVER SHEET**

Drawing Status
**SSDA SUBMISSION
NOT FOR CONSTRUCTION**

Drawn JH	Date 30.04.2025
Checked CG	Date 30.04.2025

Scale 1:2000	Sheet A1	File Name S4-CIV-TTW-DRG-SW-0000-0000
Drawing Number S4-CIV-TTW-DRG-SW-0000-0000	Rev	CNC-3

GENERAL

- CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO COMMENCEMENT OF WORKS. ANY DISCREPANCIES TO BE REPORTED TO THE SUPERINTENDENT.
- STRIP ALL TOPSOIL FROM THE CONSTRUCTION AREA. ALL STRIPPED TOPSOIL SHALL BE DISPOSED OF OFF-SITE UNLESS DIRECTED OTHERWISE.
- MAKE SMOOTH CONNECTION WITH ALL EXISTING WORKS.
- COMPACT SUBGRADE UNDER BUILDINGS AND PAVEMENTS TO MINIMUM 98% STANDARD MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 5.1.1. COMPACTION UNDER BUILDINGS TO EXTEND 2M MINIMUM BEYOND BUILDING FOOTPRINT.
- ALL WORK ON PUBLIC PROPERTY, PROPERTY WHICH IS TO BECOME PUBLIC PROPERTY, OR ANY WORK WHICH IS TO COME UNDER THE CONTROL OF THE STATUTORY AUTHORITY, THE CONTRACTOR IS TO ENSURE THAT THE DRAWINGS USED FOR CONSTRUCTION HAVE BEEN APPROVED BY ALL RELEVANT AUTHORITIES PRIOR TO COMMENCEMENT SITE.
- ALL WORK ON PUBLIC PROPERTY, PROPERTY WHICH IS TO BECOME PUBLIC PROPERTY, OR ANY WORK WHICH IS TO COME UNDER THE CONTROL OF THE STATUTORY AUTHORITY IS TO BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE RELEVANT AUTHORITY. THE CONTRACTOR SHALL OBTAIN THESE REQUIREMENTS FROM THE AUTHORITY. WHERE THE REQUIREMENTS OF THE AUTHORITY ARE DIFFERENT TO THE DRAWINGS AND SPECIFICATIONS, THE REQUIREMENTS OF THE AUTHORITY SHALL BE APPLICABLE.
- FOR ALL TEMPORARY BATTERS REFER TO GEOTECHNICAL RECOMMENDATIONS.
- DETAILS ARE SUBJECT TO CHANGE AT DETAILED DESIGN STAGE.

REFERENCE DRAWINGS

- THESE DRAWINGS HAVE BEEN BASED FROM, AND TO BE READ IN CONJUNCTION WITH THE FOLLOWING CONSULTANTS DRAWINGS. ANY CONFLICT TO THE DRAWINGS MUST BE NOTIFIED IMMEDIATELY TO THE ENGINEER.

CONSULTANT	DRAWING TITLE	DRAWING NUMBER	REVISION	DATE
LTS	PLAN OF DETAIL AND LEVELS OVER LOT 305 & PART LOT 306 IN DP1275011 KNOWN AS 6-16 JOHNSTON CRESCENT, HORSLEY PARK	52264-001 DT	1	28/04/2024
HDR	SITE WIDE SSDA PROPOSED SITE PLAN	S4-ARC-HDR-DRG -SW-0000-0070	CNC-2	17/04/2025

BOUNDARIES AND EASEMENTS

- THE PROPERTY BOUNDARY AND EASEMENT LOCATIONS SHOWN ON TAYLOR THOMSON WHITTING DRAWING'S HAVE BEEN BASED ON INFORMATION RECEIVED FROM : LTS
- TAYLOR THOMSON WHITTING MAKES NO GUARANTEES THAT THE BOUNDARY OR EASEMENT INFORMATION SHOWN IS CORRECT. TAYLOR THOMSON WHITTING WILL ACCEPT NO LIABILITIES FOR BOUNDARY INACCURACIES. THE CONTRACTOR/BUILDER IS ADVISED TO CHECK/CONFIRM ALL BOUNDARIES IN RELATION TO ALL PROPOSED WORK PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. BOUNDARY INACCURACIES FOUND ARE TO BE REPORTED TO THE SUPERINTENDENT PRIOR TO CONSTRUCTION STARTING.

SURVEY

ORIGIN OF LEVELS: SSM 206913
 DATUM OF LEVELS: AHD
 COORDINATE SYSTEM: MGA2020
 SURVEY PREPARED BY: LTS
 SETOUT POINTS: REFER SURVEYOR

- TAYLOR THOMSON WHITTING DOES NOT GUARANTEE THAT THE SURVEY INFORMATION SHOWN ON THESE DRAWINGS IS ACCURATE AND WILL ACCEPT NO LIABILITY FOR ANY INACCURACIES IN THE SURVEY INFORMATION PROVIDED TO US FROM ANY CAUSE WHATSOEVER.

UNDERGROUND SERVICES - WARNING

- THE LOCATIONS OF UNDERGROUND SERVICES SHOWN ON TAYLOR THOMSON WHITTINGS DRAWINGS HAVE BEEN PLOTTED FROM DIAGRAMS PROVIDED BY SERVICE AUTHORITIES. THIS INFORMATION HAS BEEN PREPARED SOLELY FOR THE AUTHORITIES OWN USE AND MAY NOT NECESSARILY BE UPDATED OR ACCURATE.
- THE POSITION OF SERVICES AS RECORDED BY THE AUTHORITY AT THE TIME OF INSTALLATION MAY NOT REFLECT CHANGES IN THE PHYSICAL ENVIRONMENT SUBSEQUENT TO INSTALLATION.
- THE CONTRACTOR MUST CONFIRM THE EXACT LOCATION AND EXTENT OF SERVICES PRIOR TO CONSTRUCTION AND NOTIFY ANY CONFLICT WITH THE DRAWINGS IMMEDIATELY TO THE ENGINEER/SUPERINTENDENT.
- THE CONTRACTOR IS TO GET APPROVAL FROM THE RELEVANT STATE SURVEY DEPARTMENT, TO REMOVE/ADJUST ANY SURVEY MARK. THIS INCLUDES BUT IS NOT LIMITED TO; STATE SURVEY MARKS (SSM), PERMANENT MARKS (PM), CADASTRAL REFERENCE MARKS OR ANY OTHER SURVEY MARK WHICH IS TO BE REMOVED OR ADJUSTED IN ANY WAY.
- TAYLOR THOMSON WHITTING PLANS DO NOT INDICATE THE PRESENCE OF ANY SURVEY MARK. THE CONTRACTOR IS TO UNDERTAKE THEIR OWN SEARCH.

DESIGN AND CONSTRUCT DOCUMENTATION

- THE CONTRACTOR SHALL RETAIN THE RESPONSIBILITY TO UNDERTAKE DETAILED DESIGN, CONFIRM COMPLIANCE WITH RELEVANT STANDARDS, CONSENT CONDITIONS & THE SPECIFICATION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THE FINAL DESIGN IS CO-ORDINATED FULLY WITH OTHER CONSULTANTS.
- NO VARIATION WILL BE ACCEPTED FOR DESIGN AMENDMENTS REQUIRED TO MEET THE FUNCTIONAL OBJECTIVE OF THIS DOCUMENTATION.

BEFORE YOU DIG AUSTRALIA (BYDA)

- PUBLIC SERVICE UTILITY INFORMATION SHOWN ON PLAN HAS BEEN COMPLIED FROM INFORMATION RECEIVED FROM DIAL BEFORE YOU DIG INQUIRY, REFERENCE NUMBER No.34022573 OBTAINED ON 17.04.2023 UNLESS SPECIFICALLY SHOWN OTHERWISE, THIS LOCATION AND DEPTH OF SERVICES SHOWN ON THIS PLAN HAVE NOT BEEN VERIFIED.
- THE LOCATION OF SERVICES SHOWN ON THIS DRAWING HAVE BEEN PLOTTED AS ACCURATELY AS POSSIBLE FROM DIAGRAMS PROVIDED BY SERVICE AUTHORITIES AND SHOULD BE CONFIRMED BY SITE INSPECTION.

SITE WORKS

- ALL BASECOURSE MATERIAL TO COMPLY WITH RMS SPECIFICATION NO 3051 AND COMPACTED TO MINIMUM 98% MODIFIED MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 5.2.1.
- ALL TRENCH BACKFILL MATERIAL SHALL BE COMPACTED TO THE SAME DENSITY AS THE ADJACENT MATERIAL.
- ALL SERVICE TRENCHES UNDER VEHICULAR PAVEMENTS SHALL BE BACKFILLED WITH AN APPROVED SELECT MATERIAL AND COMPACTED TO A MINIMUM 98% MODIFIED MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 5.2.1

PUBLIC DOMAIN WORKS

- PUBLIC DOMAIN WORKS ARE NOT TO COMMENCE UNTIL THESE DRAWINGS ARE STAMPED AS APPROVED.

TENDER DOCUMENTATION

- THESE DRAWINGS ARE PRELIMINARY DRAWINGS ISSUED FOR TENDER AS AN INDICATION OF THE EXTENT OF WORKS ONLY. THEY ARE NOT A COMPLETE CONSTRUCTION SET OF DRAWINGS.
- TO DETERMINE THE FULL EXTENT OF WORK, THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE ARCHITECTURAL DRAWINGS AND OTHER CONTRACT DOCUMENTS. ALLOW FOR ALL ITEMS SHOWN ON ARCHITECTURAL AND OTHER DRAWINGS AS NOT ALL ITEMS ARE SHOWN ON THE STRUCTURAL/CIVIL WORKS DRAWINGS.
- SHOULD ANY AMBIGUITY, ERROR, OMISSIONS, DISCREPANCY, INCONSISTENCY OR OTHER FAULT EXIST OR SEEM TO EXIST IN THE DOCUMENTS, IMMEDIATELY NOTIFY IN WRITING TO THE SUPERINTENDENT.
- RATES SHOWN ON THE DRAWINGS ARE FOR THE FINAL STRUCTURE/CIVIL WORKS IN PLACE AND DO NOT ALLOW FOR ANY WASTAGE, ROLLING MARGINS, OVER SUPPLY OR FABRICATION REQUIREMENTS. ETC.

DESIGN AND CONSTRUCT DOCUMENTATION

- THE LEVEL OF DETAIL / DESIGN REFLECTED IN THESE DOCUMENTS IS BASED ON THE UNDERSTANDING THIS WILL BE BUILT AS PART OF A DESIGN & CONSTRUCT CONTRACT.
- THE CONTRACTOR SHALL RETAIN THE RESPONSIBILITY TO UNDERTAKE DETAILED DESIGN, CONFIRM COMPLIANCE WITH RELEVANT STANDARDS, CONSENT CONDITIONS & THE SPECIFICATION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THE FINAL DESIGN IS CO-ORDINATED FULLY WITH OTHER CONSULTANTS.
- NO VARIATION WILL BE ACCEPTED FOR DESIGN AMENDMENTS REQUIRED TO MEET THE FUNCTIONAL OBJECTIVE OF THIS DOCUMENTATION.

SAFETY IN DESIGN

CONTRACTOR TO REFER TO APPENDIX B OF THE CIVIL SPECIFICATION FOR THE CIVIL RISK AND SOLUTIONS REGISTER.

- EXISTING SERVICES
CONTRACTOR TO BE AWARE EXISTING SERVICES ARE LOCATED WITHIN THE SITE. LOCATION OF ALL SERVICES TO BE VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCING WORKS. CONTRACTOR TO CONFIRM WITH RELEVANT AUTHORITY REGARDING MEASURES TO BE TAKEN TO ENSURE SERVICES ARE PROTECTED OR PROCEDURES ARE IN PLACE TO DEMOLISH AND/OR RELOCATE.
- EXISTING STRUCTURES
CONTRACTOR TO BE AWARE EXISTING STRUCTURES MAY EXIST WITHIN THE SITE. TO PREVENT DAMAGE TO EXISTING STRUCTURE(S) AND/OR PERSONNEL, SITE WORKS TO BE CARRIED OUT AS FAR AS PRACTICABLY POSSIBLE FROM EXISTING STRUCTURE(S).
- EXISTING TREES
CONTRACTOR TO BE AWARE EXISTING TREES EXIST WITHIN THE SITE WHICH NEED TO BE PROTECTED. TO PREVENT DAMAGE TO TREES AND/OR PERSONNEL, SITE WORKS TO BE CARRIED OUT AS FAR AS PRACTICABLY POSSIBLE FROM EXISTING TREES. ADVICE NEEDS TO BE SOUGHT FROM ARBORIST AND/OR LANDSCAPE ARCHITECT ON MEASURES REQUIRED TO PROTECT TREES.
- GROUNDWATER
CONTRACTOR TO BE AWARE GROUND WATER LEVELS ARE CLOSE TO EXISTING SURFACE LEVEL. TEMPORARY DE-WATERING MAY BE REQUIRED DURING CONSTRUCTION WORKS.
- EXCAVATIONS
DEEP EXCAVATIONS DUE TO STORMWATER DRAINAGE WORKS IS REQUIRED. CONTRACTOR TO ENSURE SAFE WORKING PROCEDURES ARE IN PLACE FOR WORKS. ALL EXCAVATIONS TO BE FENCED OFF AND BATTERS ADEQUATELY SUPPORTED TO APPROVAL OF GEOTECHNICAL ENGINEER.
- GROUND CONDITIONS
CONTRACTOR TO BE AWARE OF THE SITE GEOTECHNICAL CONDITIONS. REFER TO GEOTECHNICAL REPORT BY
 - JKGEOTECHNICS.
 - GEOTECHNICAL INVESTIGATION 10/09/2024.
- HAZARDOUS MATERIALS
EXISTING ASBESTOS PRODUCTS & CONTAMINATED MATERIAL MAY BE PRESENT ON SITE. CONTRACTOR TO ENSURE ALL HAZARDOUS MATERIALS ARE IDENTIFIED PRIOR TO COMMENCING WORKS. SAFE WORKING PRACTICES AS PER RELEVANT AUTHORITY TO BE ADOPTED AND APPROPRIATE PPE TO BE USED WHEN HANDLING ALL HAZARDOUS MATERIALS. REFER TO GEOTECHNICAL/ENVIRONMENTAL REPORT BY
 - JKGEOTECHNICS.
 - GEOTECHNICAL INVESTIGATION 10/09/2024.
- CONFINED SPACES
CONTRACTOR TO BE AWARE OF POTENTIAL HAZARDS DUE TO WORKING IN CONFINED SPACES SUCH AS STORMWATER PITS, TRENCHES AND/OR TANKS. CONTRACTOR TO PROVIDE SAFE WORKING METHODS AND USE APPROPRIATE PPE WHEN ENTERING CONFINED SPACES.
- MANUAL HANDLING
CONTRACTOR TO BE AWARE MANUAL HANDLING MAY BE REQUIRED DURING CONSTRUCTION. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ENSURE MANUAL HANDLING PROCEDURES AND ASSESSMENTS ARE IN PLACE PRIOR TO COMMENCING WORKS.
- WATER POLLUTION
CONTRACTOR TO ENSURE APPROPRIATE MEASURES ARE TAKEN TO PREVENT POLLUTANTS FROM CONSTRUCTION WORKS CONTAMINATING THE SURROUNDING ENVIRONMENT.
- SITE ACCESS/EGRESS
CONTRACTOR TO BE AWARE SITE WORKS OCCUR IN CLOSE PROXIMITY TO FOOTPATHS AND ROADWAYS. CONTRACTOR TO ERECT APPROPRIATE BARRIERS AND SIGNAGE TO PROTECT SITE PERSONNEL AND PUBLIC.
- VEHICLE MOVEMENT
CONTRACTOR TO SUPPLY AND COMPLY WITH TRAFFIC MANAGEMENT PLAN AND PROVIDE ADEQUATE SITE TRAFFIC CONTROL INCLUDING A CERTIFIED TRAFFIC MARSHALL TO SUPERVISE VEHICLE MOVEMENTS WHERE NECESSARY.

CLASSIFICATION OF EXISTING UTILITY INFORMATION

- A - SIGHTED, MUST BE LOCATED, THEN POTHOLED. UTILITY MUST BE PHYSICALLY SIGHTED AND MEASURED.
- B - ELECTRONICALLY DETECTED AND LOCATED ON SITE USING VARIOUS TRACING METHODS.
- C - ALIGNED FROM SURFACE FEATURES AND DIGITISED DATA.
- D - DIGITISED DATA (DIAL BEFORE YOU DIG).
- U - UNCLASSIFIED.

NOTES:

- BELOW GROUND SERVICES CAN BE REPRESENTED AS GREY FOR EXISTING AND BLACK FOR PROPOSED DEPENDING ON THE PLAN.
- EXISTING SERVICES PITS, STRUCTURES AND COLUMNS ARE ILLUSTRATED AS PER THE ORIGINAL SURVEY.

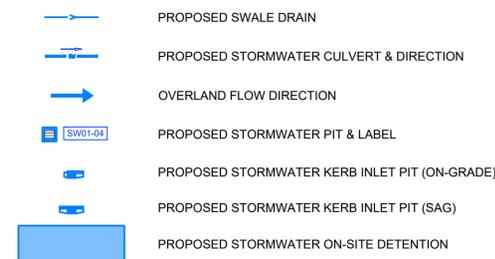
BOUNDARIES



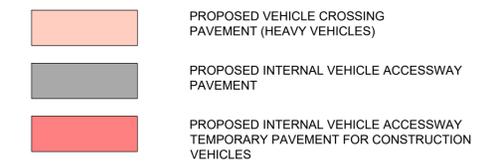
BUILDINGS



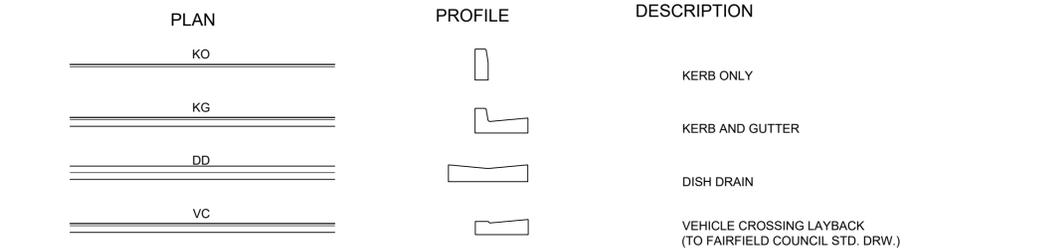
STORMWATER LEGEND



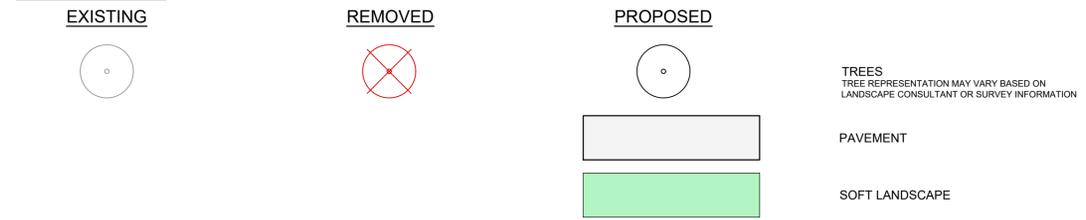
PAVEMENT LEGEND



KERB TYPES



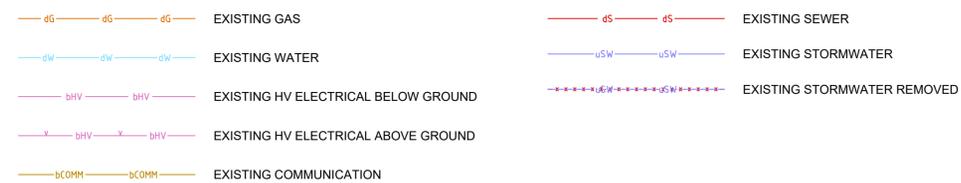
LANDSCAPE



ALIGNMENT



EXISTING UTILITIES



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Document Author Project Number
211085

Key Plan

Site: S4	Stage: 01	Phase: 01
NEXTDC Project Number: S4.0002		
Project Address: 16 JOHNSTON CRESCENT, HORSLEY PARK, NSW 2175		
Project Name: NEXTDC S4		
Drawing Title: GENERAL NOTES AND LEGEND		
Drawing Status: SSDA SUBMISSION NOT FOR CONSTRUCTION		
Drawn: JH	Date: 30.04.2025	
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Scale: NTS	Sheet: A1	File Name: S4-CIV-TTW-DRG-SW-0000-0001
Drawing Number: S4-CIV-TTW-DRG-SW-0000-0001	Rev: Cnc-3	

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 S4-CIV-TTW-DRG-SW-0000-5002

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 S4-CIV-TTW-DRG-SW-0000-6012

GENERAL COVER SHEET

GENERAL NOTES AND LEGEND
 GENERAL DRAWING INDEX
 GENERAL ARRANGEMENT PLAN
 GENERAL STAGING PLAN
 GENERAL SEDIMENT AND EROSION CONTROL PLAN
 GENERAL SEDIMENT AND EROSION CONTROL NOTES, LEGEND & DETAILS

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BULK EARTHWORKS PLAN (STAGE 1)

SITWORKS PLAN (DAY FINAL)

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STORMWATER MANAGEMENT PLAN (DAY FINAL)

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ROADWORKS PLAN (DAY FINAL)

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DATE	No.	REVISION HISTORY	DRW	CHK	QA
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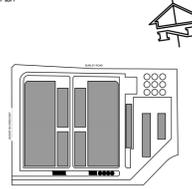
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Key Plan


Site: **S4** Stage: **01** Phase: **01**
 NEXTDC Project Number:
S4.0002
 Project Address
**16 JOHNSTON CRESCENT,
 HORSLEY PARK, NSW 2175**

Project Name
NEXTDC S4

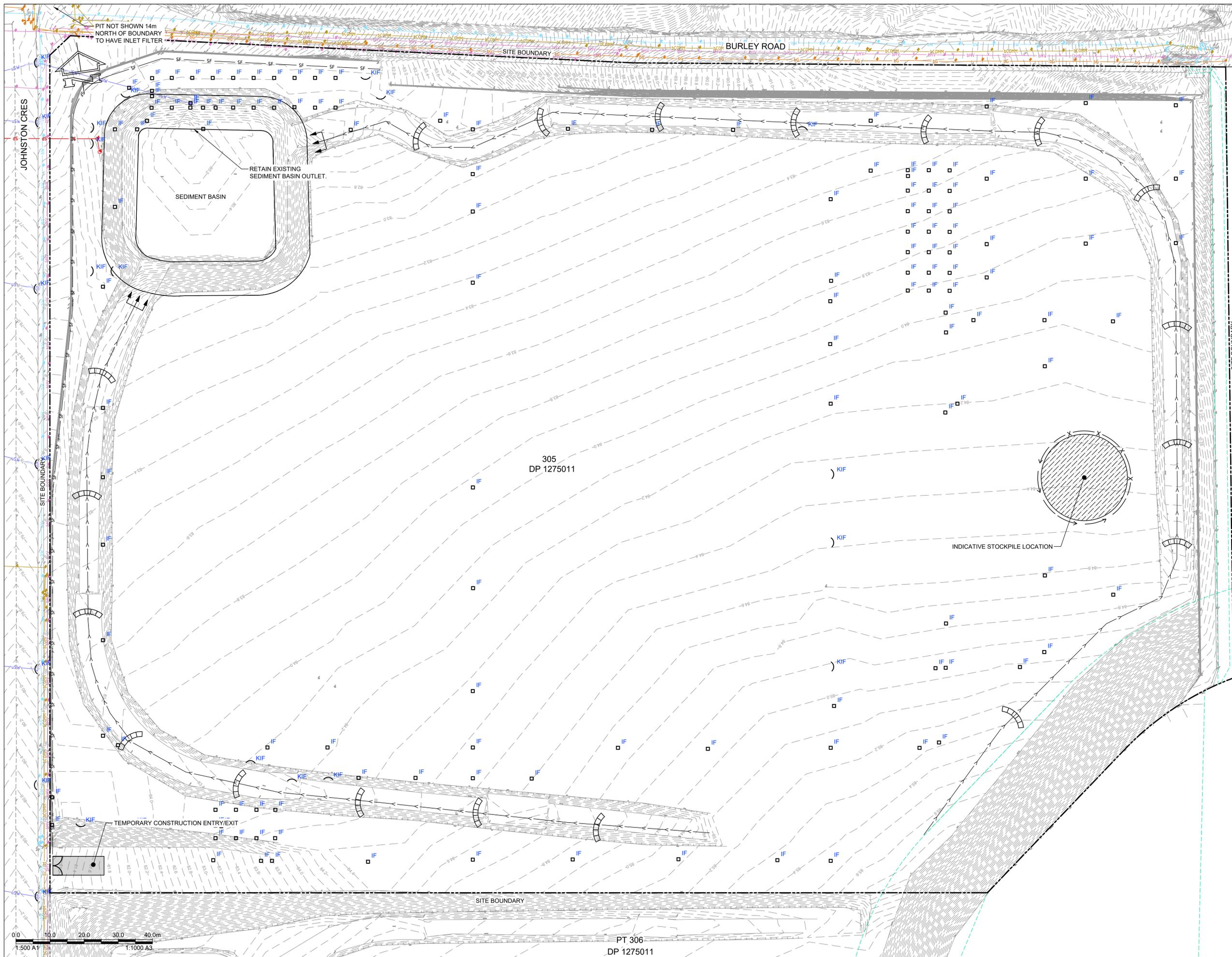
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**GENERAL
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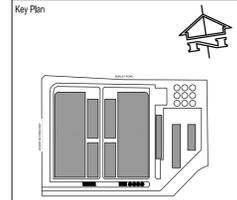
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Site:	S4	Stage:	01	Phase:	01
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NEXTDC Project Number:
S4.0002
 Project Address
**16 JOHNSTON CRESCENT,
 HORSLEY PARK, NSW 2175**

Project Name
NEXTDC S4
 Drawing Title
**GENERAL
 SEDIMENT AND
 EROSION CONTROL PLAN**

Drawing Status
**SSDA SUBMISSION
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Drawn	JH	Date	30.04.2025
Checked	CG	Date	30.04.2025
Scale	1:500	Sheet	A1
Drawing Number	S4-CIV-TTW-DRG-SW-0000-0100	File Name	S4-CIV-TTW-DRG-SW-0000-0100
		Rev	
S4-CIV-TTW-DRG-SW-0000-0100		CNC-3	

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EROSION AND SEDIMENT CONTROL NOTES

- ALL WORK SHALL BE GENERALLY CARRIED OUT IN ACCORDANCE WITH:-
 - LOCAL AUTHORITY REQUIREMENTS,
 - EPA POLLUTION CONTROL MANUAL FOR URBAN STORMWATER,
 - LANDCOM NSW - MANAGING URBAN STORMWATER: SOILS AND CONSTRUCTION ("BLUE BOOK"),
- EROSION AND SEDIMENT CONTROL DRAWINGS AND NOTES ARE PROVIDED FOR THE WHOLE OF THE WORKS. SHOULD THE CONTRACTOR STAGE THESE WORKS THEN THE DESIGN MAY BE REQUIRED TO BE MODIFIED. VARIATION TO THESE DETAILS MAY REQUIRE APPROVAL BY THE RELEVANT AUTHORITIES. THE EROSION AND SEDIMENT CONTROL PLAN SHALL BE IMPLEMENTED AND ADAPTED TO MEET THE VARYING SITUATIONS AS WORK ON SITE PROGRESSES.
- THE EROSION & SEDIMENT CONTROL PLAN IS PREPARED FOR INFORMATION & PLANNING APPROVALS ONLY. THE CONTRACTOR SHALL PREPARE THE CONSTRUCTION EROSION & SEDIMENT CONTROL PLAN BASED ON THEIR WORKS STAGING & PROPOSED SITE FACILITIES.
- MAINTAIN ALL EROSION AND SEDIMENT CONTROL DEVICES TO THE SATISFACTION OF THE SUPERINTENDENT AND THE LOCAL AUTHORITY.
- WHEN STORMWATER PITS ARE CONSTRUCTED PREVENT SITE RUNOFF ENTERING THE PITS UNLESS SILT FENCES ARE ERECTED AROUND PITS.
- MINIMISE THE AREA OF SITE BEING DISTURBED AT ANY ONE TIME.
- PROTECT ALL STOCKPILES OF MATERIALS FROM SCOUR AND EROSION. DO NOT STOCKPILE LOOSE MATERIAL IN ROADWAYS, NEAR DRAINAGE PITS OR IN WATER COURSES.
- ALL SOIL AND WATER CONTROL MEASURES ARE TO BE PUT BACK IN PLACE AT THE END OF EACH WORKING DAY, AND MODIFIED TO BEST SUIT SITE CONDITIONS.
- CONTROL WATER FROM UPSTREAM OF THE SITE SUCH THAT IT DOES NOT ENTER THE DISTURBED SITE.
- ALL CONSTRUCTION VEHICLES SHALL ENTER AND EXIT THE SITE VIA THE TEMPORARY CONSTRUCTION ENTRY/EXIT.
- ALL VEHICLES LEAVING THE SITE SHALL BE CLEANED AND INSPECTED BEFORE LEAVING.
- MAINTAIN ALL STORMWATER PIPES AND PITS CLEAR OF DEBRIS AND SEDIMENT. INSPECT STORMWATER SYSTEM AND CLEAN OUT AFTER EACH STORM EVENT.
- CLEAN OUT ALL EROSION AND SEDIMENT CONTROL DEVICES AFTER EACH STORM EVENT.

SEQUENCE OF WORKS

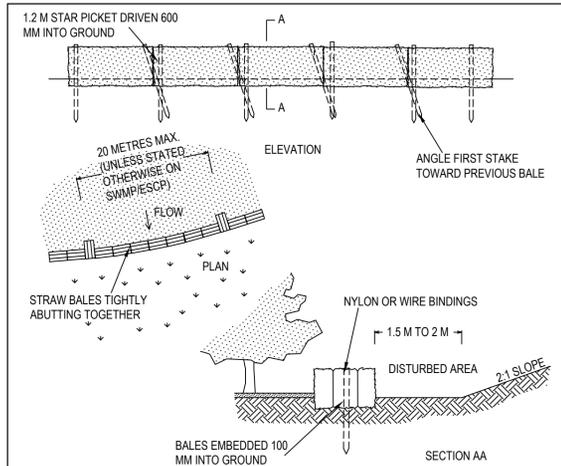
- PRIOR TO COMMENCEMENT OF EXCAVATION THE FOLLOWING SOIL MANAGEMENT DEVICES MUST BE INSTALLED.
 - CONSTRUCT SILT FENCES BELOW THE SITE AND ACROSS ALL POTENTIAL RUNOFF SITES.
 - CONSTRUCT TEMPORARY CONSTRUCTION ENTRY/EXIT AND DIVERT RUNOFF TO SUITABLE CONTROL SYSTEMS.
 - CONSTRUCT MEASURES TO DIVERT UPSTREAM FLOWS INTO EXISTING STORMWATER SYSTEM.
 - CONSTRUCT SEDIMENTATION TRAPS/BASIN INCLUDING OUTLET CONTROL AND OVERFLOW.
 - CONSTRUCT TURF LINED SWALES.
 - PROVIDE SANDBAG SEDIMENT TRAPS UPSTREAM OF EXISTING PITS.
- CONSTRUCT GEOTEXTILE FILTER PIT SURROUND AROUND ALL PROPOSED PITS AS THEY ARE CONSTRUCTED.
- ON COMPLETION OF PAVEMENT PROVIDE SAND BAG KERB INLET SEDIMENT TRAPS AROUND PITS.
- PROVIDE AND MAINTAIN A STRIP OF TURF ON BOTH SIDES OF ALL ROADS AFTER THE CONSTRUCTION OF KERBS.

WATER QUALITY TESTING REQUIREMENTS

- PRIOR TO DISCHARGE OF SITE STORMWATER, GROUNDWATER AND SEEPAGE WATER INTO COUNCIL'S STORMWATER SYSTEM, CONTRACTORS MUST UNDERTAKE WATER QUALITY TESTS IN CONJUNCTION WITH A SUITABLY QUALIFIED ENVIRONMENTAL CONSULTANT OUTLINING THE FOLLOWING:-
 - COMPLIANCE WITH THE CRITERIA OF THE AUSTRALIAN AND NEW ZEALAND GUIDELINES FOR FRESH AND MARINE WATER QUALITY (2000)
 - IF REQUIRED SUBJECT TO THE ENVIRONMENTAL CONSULTANTS ADVICE, PROVIDE REMEDIAL MEASURES TO IMPROVE THE QUALITY OF WATER THAT IS TO BE DISCHARGED INTO COUNCILS STORM WATER DRAINAGE SYSTEM THIS SHOULD INCLUDE COMMENTS FROM A SUITABLY QUALIFIED ENVIRONMENTAL CONSULTANT CONFIRMING THE SUITABILITY OF THESE REMEDIAL MEASURES TO MANAGE THE WATER DISCHARGED FROM THE SITE INTO COUNCILS STORM WATER DRAINAGE SYSTEM. OUTLINING THE PROPOSED, ONGOING MONITORING, CONTINGENCY PLANS AND VALIDATION PROGRAM THAT WILL BE IN PLACE TO CONTINUALLY MONITOR THE QUALITY OF WATER DISCHARGED FROM THIS SITE. THIS SHOULD OUTLINE THE FREQUENCY OF WATER QUALITY TESTING THAT WILL BE UNDERTAKEN BY A SUITABLY QUALIFIED ENVIRONMENTAL CONSULTANT.

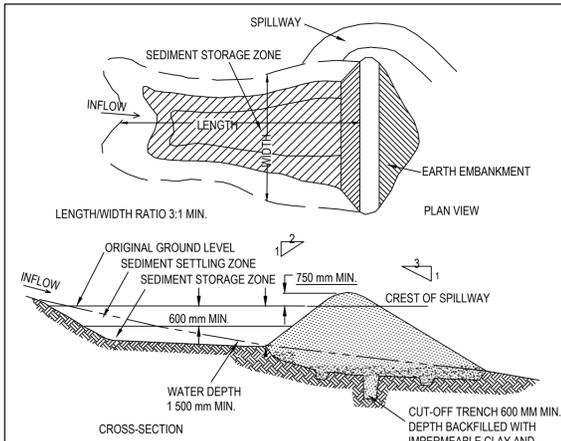
EROSION AND SEDIMENT CONTROL LEGEND

- SF SEDIMENT FENCE (6-8)
- IF STORMWATER PIT WITH GEOTEXTILE INLET FILTER (SD6-12)
- SB STRAW BALE FILTERS (SD6-7)
- CD CATCH DRAIN



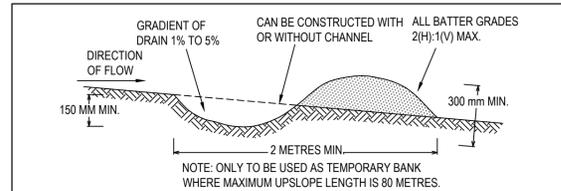
- CONSTRUCTION NOTES:**
- CONSTRUCT THE STRAW BALE FILTER AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE.
 - PLACE BALES LENGTHWISE IN A ROW WITH ENDS TIGHTLY ABUTTING. USE STRAW TO FILL ANY GAPS BETWEEN BALES. STRAWS ARE TO BE PLACED PARALLEL TO GROUND.
 - ENSURE THAT THE MAXIMUM HEIGHT OF THE FILTER IS ONE BALE.
 - EMBED EACH BALE IN THE GROUND 75 mm TO 100 mm AND ANCHOR WITH TWO 1.2 METRE STAR PICKETS OR STAKES. ANGLE THE FIRST STAR PICKET OR STAKE IN EACH BALE TOWARDS THE PREVIOUSLY LAID BALE DRIVE THEM 600 mm INTO THE GROUND AND, IF POSSIBLE, FLUSH WITH THE TOP OF THE BALES. WHERE STAR PICKETS ARE USED AND THEY PROTRUDE ABOVE THE BALES, ENSURE THEY ARE FITTED WITH SAFETY CAPS.
 - WHERE A STRAW BALE FILTER IS CONSTRUCTED DOWNSLOPE FROM A DISTURBED BATTER, ENSURE THE BALES ARE PLACED 1 TO 2 METRES DOWNSLOPE FROM THE TOE.
 - ESTABLISH A MAINTENANCE PROGRAM THAT ENSURES THE INTEGRITY OF THE BALES IS RETAINED - THEY COULD REQUIRE REPLACEMENT EACH TWO TO FOUR MONTHS.

STRAW BALE FILTER SD 6-7



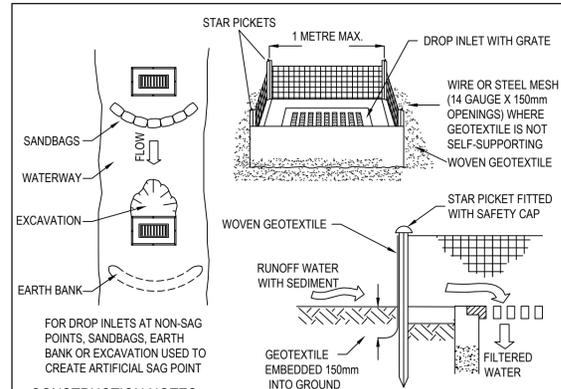
- CONSTRUCTION NOTES:**
- REMOVE ALL VEGETATION AND TOPSOIL FROM UNDER THE DAM WALL AND FROM WITHIN THE STORAGE AREA.
 - CONSTRUCT A CUT-OFF TRENCH 500 MM DEEP AND 1,200 MM WIDE ALONG THE CENTRELINE OF THE EMBANKMENT EXTENDING TO A POINT ON THE GULLY WALL LEVEL WITH THE RISER CREST.
 - MAINTAIN THE TRENCH FREE OF WATER AND RECOMPACT THE MATERIALS WITH EQUIPMENT AS SPECIFIED IN THE SWMP TO 95 PER CENT STANDARD PROCTOR DENSITY.
 - SELECT FILL FOLLOWING THE SWMP THAT IS FREE OF ROOTS, WOOD, ROCK, LARGE STONE OR FOREIGN MATERIAL.
 - PREPARE THE SITE UNDER THE EMBANKMENT BY RIPPING TO AT LEAST 100 MM TO HELP BOND COMPACTED FILL TO THE EXISTING SUBSTRATE.
 - SPREAD THE FILL IN 100 MM TO 150 MM LAYERS AND COMPACT IT AT OPTIMUM MOISTURE CONTENT FOLLOWING THE SWMP.
 - CONSTRUCT THE EMERGENCY SPILLWAY. 8. REHABILITATE THE STRUCTURE FOLLOWING THE SWMP.

EARTH BASIN - WET (APPLIES TO 'TYPE D' AND 'TYPE F' SOILS ONLY) SD 6-4



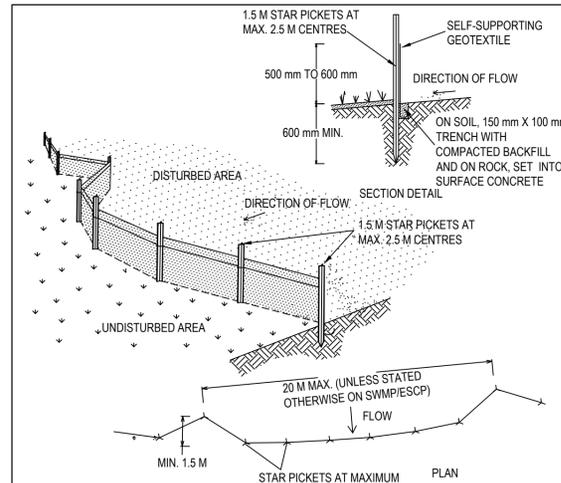
- CONSTRUCTION NOTES:**
- BUILD WITH GRADIENTS BETWEEN 1 PERCENT AND 5 PERCENT.
 - AVOID REMOVING TREES AND SHRUBS IF POSSIBLE - WORK AROUND THEM.
 - ENSURE THE STRUCTURES ARE FREE OF PROJECTIONS OR OTHER IRREGULARITIES THAT COULD IMPEDE WATER FLOW.
 - BUILD THE DRAINS WITH CIRCULAR, PARABOLIC OR TRAPEZOIDAL CROSS SECTIONS, NOT V SHAPED.
 - ENSURE THE BANKS ARE PROPERLY COMPACTED TO PREVENT FAILURE.
 - COMPLETE PERMANENT OR TEMPORARY STABILISATION WITHIN 10 DAYS OF CONSTRUCTION.

EARTH BANK (LOW FLOW) SD 5-5



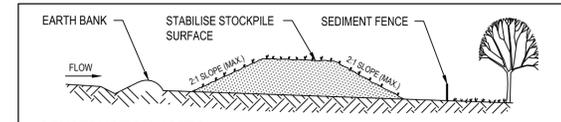
- CONSTRUCTION NOTES:**
- FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OR STRAW BALES.
 - FOLLOW STANDARD DRAWING 6-7 AND STANDARD DRAWING 6-8 FOR INSTALLATION PROCEDURES FOR THE STRAW BALES OR GEOFABRIC. REDUCE THE PICKET SPACING TO 1m CENTRES.
 - IN WATERWAYS, ARTIFICIAL SAG POINTS CAN BE CREATED WITH SANDBAGS OR EARTH BANKS AS SHOWN IN THE DRAWING.
 - DO NOT COVER THE INLET WITH GEOTEXTILE UNLESS THE DESIGN IS ADEQUATE TO ALLOW FOR ALL WATERS TO BYPASS IT.

GEOTEXTILE INLET FILTER SD 6-12



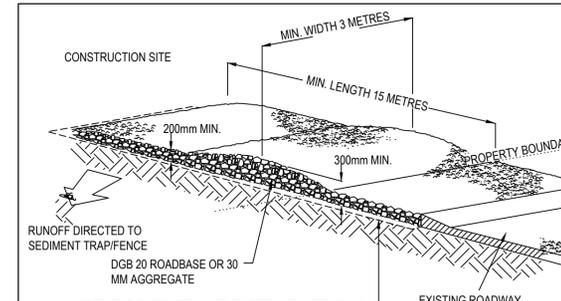
- CONSTRUCTION NOTES:**
- CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND IN THE DESIGN STORM EVENT, USUALLY THE 10-YEAR EVENT.
 - CUT A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
 - DRIVE 1.5 METRE LONG STAR PICKETS INTO GROUND AT 2.5m INTERVALS (MAX) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
 - FIX SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.
 - JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.
 - BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

SEDIMENT FENCE SD 6-8



- CONSTRUCTION NOTES:**
- PLACE STOCKPILES MORE THAN 2 (PREFERABLY 5) METRES FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.
 - CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS.
 - WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2 METRES IN HEIGHT.
 - ALL STOCKPILES ARE TO BE LOCATED AND PLACED IN ACCORDANCE WITH THE CONTRACTOR'S EROSION AND SEDIMENT CONTROL PLAN.
 - WHERE STOCKPILES ARE TEMPORARY (<14 DAYS) NO STABILISATION IS REQUIRED. REVIEW THE ADEQUACY OF SEDIMENT CONTROLS IF RAINFALL IS PREDICTED.
 - WHERE STOCKPILES ARE TEMPORARY (<14 DAYS) THE FOLLOWING ADDITIONAL CONTROLS ARE REQUIRED:-
 - MAXIMUM BATTER SLOPE REDUCED TO 1:4
 - CONSTRUCT A CONTOUR DRAIN ON THE LOW SIDE OF THE STOCKPILE, AND DISCHARGING THROUGH A STRAW BALE OR 200mm HIGH GRAVEL DAM
 - ESTABLISH GRASS COVER TO SURFACE OF STOCKPILE WITHIN 14 DAYS, USING HYDROMULCH WITH A 75:25 MIX OF SEASONAL AND PERMANENT GRASS SEEDS, AND A STRAW MULCH THICKNESS OF NO LESS THAN 5mm.
 - CONSTRUCT EARTH BANKS (STANDARD DRAWING 5-5) ON THE UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES AND SEDIMENT FENCES (STANDARD DRAWING 6-8) 1 TO 2 METRES DOWNSLOPE.

STOCKPILES SD 4-1



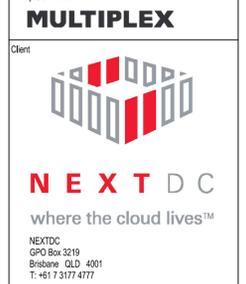
- CONSTRUCTION NOTES:**
- STRIP THE TOPSOIL, LEVEL THE SITE AND COMPACT THE SUBGRADE.
 - COVER THE AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
 - CONSTRUCT A 200mm THICK PAD OVER THE GEOTEXTILE USING ROAD BASE OR 30mm AGGREGATE.
 - ENSURE THE STRUCTURE IS AT LEAST 15 METRES LONG OR TO BUILDING ALIGNMENT AND AT LEAST 3m WIDE.
 - WHERE A SEDIMENT FENCE JOINS ONTO THE STABILISED ACCESS, CONSTRUCT A HUMP IN THE STABILISED ACCESS TO DIVERT WATER TO THE SEDIMENT FENCE

STABILISED SITE ACCESS SD 6-14

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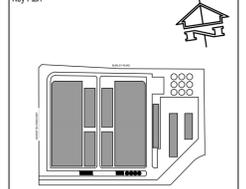
- NOTE:**
- ALL DRAWINGS TO BE READ IN CONJUNCTION WITH ASSOCIATED SPECIFICATION
 - DO NOT SCALE FROM DRAWINGS
 - CONFIRM ALL MEASUREMENTS ON SITE
 - CHECK ON SITE PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES
 - ENSURE COORDINATION WITH OTHER TRADES ON SITE
 - ASL = ABOVE SLAB LEVEL

Principal Consultants
 Architect
 Services
TTW
 Structural
TTW
 Principal Contractor
MULTIPLEX



Level 6, 73 Miller street
 North Sydney NSW 2060
 Nominated Engineers
 NSW GRADE CARP, CHRS GENTLE

Document Author Project Number
 211085



Site:	S4	Stage:	01	Phase:	01
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NEXTDC Project Number:
 S4.0002
 Project Address:
 16 JOHNSTON CRESCENT,
 HORSLEY PARK, NSW 2175

Project Name
NEXTDC S4

Drawing Title
**GENERAL
 SEDIMENT AND
 EROSION CONTROL NOTES,
 LEGEND AND DETAILS**

Drawing Status
**SSDA SUBMISSION
 NOT FOR CONSTRUCTION**

Drawn	Date	
JH	30.04.2025	
Checked	Date	
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Drawing Number	Rev	
S4-CIV-TTW-DRG-SW-0000-0110	CNC-3	

14.4 Appendix 4: Construction Noise and Vibration Management Plan

Multiplex

NEXTDC S4

Construction Noise and Vibration Management Plan

February 2026

For internal use



Question today Imagine tomorrow Create for the future

NEXTDC S4 Construction Noise and Vibration Management Plan

Multiplex

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	Name	Date	Signature
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Approved by:	Ben Ison	17/02/26	

WSP acknowledges that every project we work on takes place on First Peoples lands.
We recognise Aboriginal and Torres Strait Islander Peoples as the first scientists and engineers and pay our respects to Elders past and present.

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Glossary

Assessment period	The period in a day over which assessments are made.
Background noise	The underlying level of noise present in ambient noise, generally excluding the noise source under investigation, when extraneous noise is removed. This is commonly described using the L_{AF90} descriptor.
Decibels (dB)	<p>The level of noise is measured objectively using a sound level meter.</p> <p>The range of pressure variations associated with everyday living may span over a range of a million to one. Instead of expressing pressure in this enormous range of unit, it is convenient to condense this range to a logarithmic scale and give it the units of decibels.</p>
dBA: A-weighted decibels	A-weighting is an adjustment made to sound-level measurement to approximate the response of the human ear. Most environmental noise is measured using the ‘A’ filter. The correction methodology is outlined in IEC61672-2:2013 Electroacoustics – Sound Level Meters – Part 2: Pattern evaluations tests.
dB(C): C-weighted decibels	C-weighting is an adjustment made to sound-level measurement which is better suited for the assessment of low frequency noise. The correction methodology is outlined in IEC61672-2:2013 Electroacoustics – Sound Level Meters – Part 2: Pattern evaluations tests.
Frequency	The time rate for each wave peak (of a sound wave) to pass a given point. Subjectively frequency is the pitch of noise and is measured in hertz (Hz).
L_{90}	The level of noise exceeded for 90% of the time for which a given sound is measured. The L_{90} noise level expressed in units of dB and is commonly used to describe the level of background noise.
L_{eq}	Equivalent sound pressure level – the steady sound level that, over a specified period of time, will produce the same energy equivalence as the fluctuating sound level actually occurring.
L_{Max}	The maximum noise level during a specified period implementing a fast time constant.
Rating Background Level (RBL)	The median value of the ABLs during each assessment period (day/evening/night) over the whole duration of monitoring period. This level is considered for the calculation of criterion under Queensland legislation.

1 Introduction

Multiplex has engaged WSP Australia Pty Ltd (WSP) to provide a Construction Noise and Vibration Management Plan (CNVMP) for the proposed NEXTDC S4 data centre development located at 16 Johnston Crescent, Horlsey Park, NSW (the Project).

This report considers the potential noise and vibration impacts that may be associated with the construction of the Project, identifies any potential noise and vibration risk, and provides high level recommendations of mitigation and management options.

1.1 Project description

NEXTDC has commissioned Multiplex to construct the following:

- Four 4-storey data centre buildings (A, B, C and D) which will include 2 data halls, plant rooms and office areas
- Security Office centre (SOC) building
- Above ground diesel and water storage tanks.

The Project will also include the following components which will be constructed by Transgrid and as such these are outside the scope of this CNVMP:

- HV Switching building
 - 330 kV substation
-

1.2 Purpose of this plan

This CNVMP aims to achieve the following:

- Identify the relevant legislative requirements
 - Identify potential noise impacts and sensitive receivers associated with the project
 - Identify potential vibration impacts associated with the project
 - Outline systems and management measures to reduce or eliminate identified noise or vibration impacts
 - Outline the responsibilities of those involved in the control of noise and vibration impacts
 - Outline an effective monitoring, auditing and reporting framework to assess the effectiveness of the controls implemented.
-

1.3 Reference documentation

- Aurecon, NEXTDC S4, Noise and Vibration Assessment, Revision H, Ref: P521243, 1 May 2025 (SSDA Noise and Vibration Assessment)
- Multiplex, NEXTDC S4 Stage 1 Phase 1 Construction Management Plan, Revision 3, 19 November 2025 (CMP)
- Multiplex, NEXTDC S4 Stakeholder and Communications Management Plan, Draft version, November 2025 (SCMP)

1.4 Relevant Guidelines

The following guidelines apply to the management of noise and vibration impacts from construction works in NSW:

- Approved methods for the measurement and analysis of environmental noise in NSW (Environmental Protection Authority, 2022)
- Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009) (ICNG)
- Road Noise Policy (Department of Climate Change and Water, 2011) (RNP)
- Assessing Vibration: A Technical Guideline (Department of Environment and Conservation, 2006) (AVTG)
- Construction Noise and Vibration Guideline (for roads and maritime works) (Transport for NSW, 2022) (CNVG)
- Noise Policy for Industry (NSW Environmental Protection Authority, 2017) (NPfI)
- *Australian Standard – Guide to noise and vibration control on construction, demolition and maintenance sites (AS 2436, 2010)*
- *British Standard BS 5228-1: Code of practice for noise and vibration control on construction and open sites. Part 1: Noise (BS 5228-1, 2014)*
- *German Standard DIN 4150-3 Structural Vibration – Part 3: Effects of vibration on structures (DIN4150-3, 1999)*
- *ISO 9613:2024 Acoustics – Attenuation of sound during propagation outdoors (ISO 9613)*
- Sydney Water Specialist Engineering Assessment Procedure, Version 1, February 2021 (SEAP)
- Sydney Water Technical Guideline – Building over and adjacent to pipe assets, October 2025 (SWTG)
- NEXTDC S4 – Program WOAP, December 2025

1.5 Staff qualification

All WSP staff involved with the preparation of this report are considered ‘suitably qualified’ through:

- Membership of the Australian Acoustical Society (AAS), and/or
- Being based in locations that hold membership of the Association of Australasian Acoustical Consultants (AAAC).

These personnel have completed other Construction Noise and Vibration Management Plans (CNVMP) and undertaken associated activities that have been endorsed previously by the NSW Environment Protection Authority (EPA).

2 Existing environment

2.1 Study area

The Project site is located in an IN1 zone (General Industrial), approximately 2.5 km to the northeast of the township of Horsley Park, in the Fairfield Local Government Area (LGA).

The site is surrounded by IN1 land use to the north, west and south. Some of these sites are subject to extensive, large scale industrial redevelopment.

The land to the east of the Project site is a RU4 zone (Primary Production Small Lots) and includes residential properties.

Existing noise conditions in the surrounding area are characterised by operational and local traffic noise from nearby heavy industrial, logistics and warehouses land uses, distant road traffic and natural environmental noise (such as wind and wildlife).

The noise study area has been defined in the SSDA Noise and Vibration Assessment and is provided in Figure 2.1, which includes the location of NEXTDC site, background noise monitoring locations, and representative sensitive receivers.

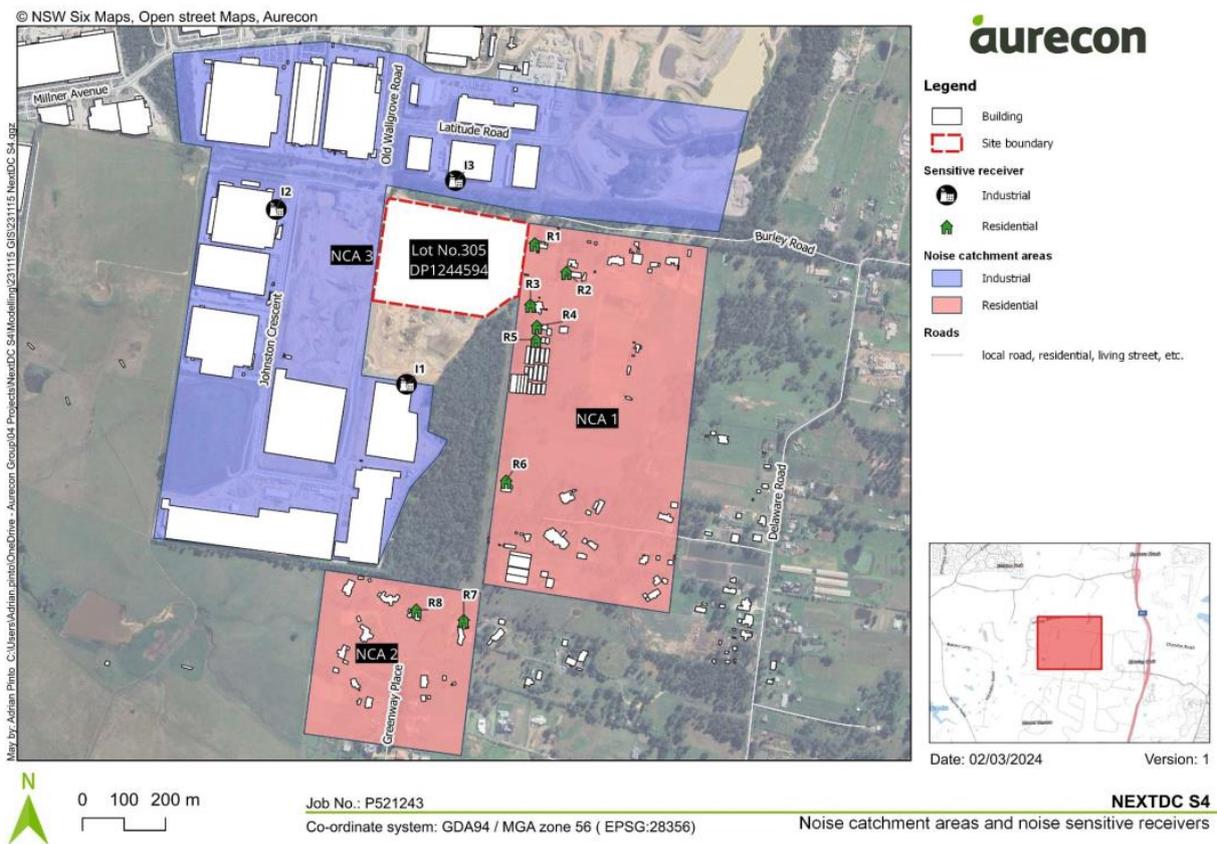


Figure 2.1 Noise catchment areas and nearest sensitive receivers (Source: Aurecon Report: S4-ACO-AUR-REP-0000-0000-NVA-SPC-H Figure 4-2)

2.2 Noise sensitive receivers

The SSDA Noise and Vibration Assessment identified 11 representative noise sensitive receivers surrounding the Project and separated these into Noise Catchment Areas (NCAs) based on similar land use and ambient noise environment.

These are listed in Table 2.1.

Table 2.1 Representative noise sensitive receivers

NCA	ID	Address	Receiver Category	Distance to receiver from closest edge of Project footprint (m)
NCA1	R1	321-325 Burley Rd, Horsley Park NSW 2175	Residential (Rural)	21
	R2	285 Burley Rd, Horsley Park NSW 2175	Residential (Rural)	102
	R3	315-319 Burley Rd, Horsley Park NSW 2175	Residential (Rural)	35
	R4	301-313 Burley Rd, Horsley Park NSW 2175	Residential (Rural)	95
	R5	301-313 Burley Rd, Horsley Park NSW 2175	Residential (Rural)	120
	R6	253-255 Delaware Rd, Horsley Park NSW 2175	Residential (Rural)	403
NCA2	R7	49-53 Greenway Pl, Horsley Park NSW 2175	Residential (Rural)	742
	R8	47-48 Greenway Pl, Horsley Park NSW 2175	Residential (Rural)	726
NCA3	I1	12 Johnston Cres, Horsley Park NSW 2175	Industrial	192
	I2	2 Johnston Cres, Horsley Park NSW 2175	Industrial	262
	I3	2 Latitude Dr, Horsley Park NSW 2175	Industrial	73

2.3 Vibration sensitive receivers

Vibration sensitive receivers include all regularly occupied buildings, utilities and sensitive structures within the study area. At sufficient levels, vibration can lead to cosmetic (and possibly structural) building damage as well as disturbance

to occupants (human comfort). All identified noise sensitive receivers may also be considered potentially vibration sensitive. However, receivers located ≥ 100 m from the works are not expected to be impacted.

Vibration can also affect sensitive structures such as heritage listed buildings and underground utilities. Whilst it is understood that no heritage items have been identified in the area surrounding the project, there are buried Sydney Water assets located within close proximity to the northwest corner of the Project site. Impacts onto these will be assessed.

2.4 Existing noise environment

A summary of noise measurements conducted within the study area on 5 till 12 December 2023 is used as the basis for deriving noise criteria, as documented in the SSDA Noise and Vibration Assessment, is presented below in Table 2.2.

Table 2.2 Summary of noise measurement results

Location	Rating background noise (RBL) ^{1,2} L _{A90(period)} dB			Average noise level ² L _{Aeq(period)} dB		
	Day	Evening	Night	Day	Evening	Night
NCA 1	37	38	39	53	49	47
NCA 2	35	39	38	66	57	60

Note 1: RBL is the median of the measured L_{A90} noise level for each date during the day, evening, and night-time periods of the monitoring programme.

Note 2: For the rating background and ambient noise levels, the periods are defined as per the NPfI (EPA, 2017):

- Day: the period from 7.00 am to 6.00 pm Monday to Saturday or 8.00 am to 6.00 pm on Sundays and public holidays
- Evening: the period from 6.00 pm to 10.00 pm
- Night: the remaining periods.
- For the 15-hour and 9-hour ambient noise levels, as per the Development Near Rail Corridors and Busy Roads – Interim Guideline (NSW DoP, 2008), day refers to the 7am to 10pm while night refers to 10pm to 7am.

3 Development consent conditions

Development consent conditions for the Project (SSD-63741210) have been issued by the Minister for Planning and Public Spaces.

Conditions relevant to construction noise and vibration are listed in Table 3.1 along with the relevant section of this document where they are addressed.

Table 3.1 Conditions compliance table

Aspect	No.	Condition	Report section
Hours of work	B1	<p>The Applicant must comply with the hours detailed in Table 2 below, and as altered by conditions A7(b) and B2 of this consent</p> <p>Table 2 sets the following hours for construction activities:</p> <ul style="list-style-type: none"> — 7am to 6pm Monday to Friday — 8am to 1pm Saturday 	5.1.2
Out-of-hours Works	B2	<p>Works outside of the hours identified in condition B1 may be undertaken in the following circumstances:</p> <p>(a) works that are inaudible at the nearest sensitive receivers;</p> <p>(b) works agreed to in writing by the Planning Secretary;</p> <p>(c) for the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; or</p> <p>(d) where it is required in an emergency to avoid the loss of lives, property or to prevent environmental harm</p>	N/A
	B3	<p>Any out-of-hours works request seeking the agreement of the Planning Secretary (see condition B2(b)) must:</p> <p>(a) be prepared with regard to the relevant sections of the Interim Construction Noise Guideline (ICNG);</p> <p>(b) be accompanied by details of the nature and need for activities to be undertaken outside of the hours identified in condition B1; and</p> <p>(c) be accompanied by evidence confirming that:</p> <ul style="list-style-type: none"> (i) the proposed activities are justified; (ii) appropriate consultation with potentially affected receivers has been and/or will be undertaken; (iii) the relevant local council has been and/or will be notified; (iv) any potential noise impacts associated with the out-of-hours works will not unreasonably impact on the acoustic amenity of sensitive receivers in the vicinity of the works. 	N/A

Aspect	No.	Condition	Report section
Construction Noise Limits	B4	The development must be constructed to achieve, as far as is feasible and reasonable, the construction noise management levels detailed in the Interim Construction Noise Guide (ICNG). All feasible and reasonable noise mitigation measures must be implemented and any activities that could exceed the construction noise management levels must be identified and managed in accordance with the management and mitigation measures in Appendix 3 of this consent and the development's Construction Noise Management Plan (see condition B5).	4.1.1
Construction Noise Management Plan	B5	Prior to the commencement of construction, the Applicant must prepare a Construction Noise Management Plan (CNMP) for the development to the satisfaction of the Planning Secretary. The CNMP must form part of the development's CEMP in accordance with condition C2 and must:	-
	B5 (a)	be prepared by a suitably qualified and experienced noise expert(s)	1.5
	B5 (b)(i)	refine the construction methodology and work schedule to minimise construction noise impacts;	5.1 and 6
	B5 (b)(ii)	achieve, as far as is feasible and reasonable, the noise management levels in the ICNG;	5.2.4 and 5.2.5
	B5 (c)(i)	site-specific noise management and mitigation measures to be implemented during construction to reduce impacts on most affected sensitive receivers	6
	B5 (c)(ii)	a list of relevant management and mitigation measures, including any described in Appendix 3 of this consent;	6
	B5 (c)(iii)	a description of measures to be implemented to manage high noise generating works in close proximity to sensitive receivers;	6
	B5 (c)(iv)	strategies that have been developed in consultation with nearby sensitive receivers for managing noise impacts and high noise generating works, such as any alternative construction methods with lower source intensity levels and/or provision for respite periods;	(Section 7.2 lists the community consultation activities that have been undertaken and that will continue to be carried out to develop and implement additional mitigation/strategies as required)
	B5 (c)(v)	a description of the community consultation undertaken to develop the strategies in (c)(iii) and (c)(iv) above; and	
	B5 (c)(vi)	a complaints management system to be implemented for the duration of construction.	7.2

4 Assessment criteria

4.1 Construction noise

4.1.1 *Interim Construction Noise Guideline*

The following sections detail the applicable site-specific construction noise objectives based on the ICNG.

4.1.1.1 Recommended standard construction hours

The ICNG provides guidance for the assessment of construction noise. It establishes noise management levels according to the hours in which construction may take place. The ICNG recommended standard hours for construction are:

- Monday to Friday: 7 am to 6 pm
- Saturday: 8 am to 1 pm
- No work on Sundays or Public Holidays

4.1.1.2 Work outside standard construction hours

The ICNG acknowledges that it may be necessary to conduct some activities outside the recommended standard construction hours, and allows the following activities when all feasible and reasonable mitigation measures are implemented to minimise the impacts to any surrounding sensitive land uses:

- the delivery of oversized plant or structures that police or other authorities determine requires special arrangements to transport along public roads
- works where a proponent demonstrates and justifies a need to operate outside the recommended standard construction hours

4.1.1.3 Construction Noise Management Levels

The ICNG states that the potential for construction noise impacts can be assessed by comparing the predicted noise levels at the assessment locations with the NMLs provided by the ICNG. Construction is considered to have the potential to cause a noise impact if the predicted noise exceeds the noise management levels.

The ICNG NMLs are listed in Table 4.1.

Table 4.1 ICNG NMLs

Time of day	Noise Management Level ($L_{Aeq,15min}$ dBA) ¹	How to apply?
Residences		
<p>Recommended standard hours:</p> <ul style="list-style-type: none"> — Monday to Friday 7 am to 6 pm — Saturday 8 am to 1 pm — No work on Sundays and public holidays 	<p>Noise affected RBL + 10 dB</p>	<p>The noise affected level represents the point above which there may be some community reaction to noise.</p> <ul style="list-style-type: none"> — Where the predicted or measured $L_{Aeq,15min}$ is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to meet the noise affected level. — The proponent should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details
	<p>Highly noise affected 75 dBA</p>	<p>The highly noise affected level represents the point above which there may be strong community reaction to noise.</p> <ul style="list-style-type: none"> — Where noise is above this level, the relevant authority may require respite periods by restricting the hours that the very noisy activities can occur, taking into account: <ol style="list-style-type: none"> 1. times identified by the community when they are less sensitive to noise (such as before and after school for works near schools, or mid morning or mid-afternoon for works near residences 2. if the community is prepared to accept a longer period of construction in exchange for restrictions on construction times.
<p>Outside recommended standards hours</p>	<p>Noise affected RBL + 5 dB</p>	<p>A strong justification would typically be required for works outside the recommended standard hours. The proponent should apply all feasible and reasonable work practices to meet the noise affected level.</p> <p>Where all feasible and reasonable practices have been applied and noise is more than 5 dBA above the noise affected level, the proponent should negotiate with the community.</p>
Industrial		

Time of day	Noise Management Level ($L_{eq\ 15min\ dBA}$) ¹	How to apply?
When property is in use	75 dBA	The external noise levels should be assessed at the most-affected occupied point of the premises.
Notes:		
<p>1. Noise levels apply at the property boundary that is most exposed to construction noise, and at a height of 1.5 metres above ground level. If the property boundary is more than 30 metres from the residence, the location for measuring or predicting noise levels is at the most noise-affected point within 30 metres of the residence. Noise levels may be higher at upper floors of the noise affected residence.</p>		

4.1.1.4 Applicable NMLs

The applicable NMLs for the Project have been documented in the SSDA Noise and Vibration Assessment and are reproduced in Table 4.2.

Table 4.2 Applicable NMLs

Locations	Recommended standard hours NML $L_{eq\ 15min\ dBA}$	Outside standard hours NML $L_{eq\ 15min\ dBA}$			Highly affected NML $L_{eq\ 15min\ dBA}$
		OOHW period 1 (day)	OOHW period 1 (evening)	OOHW period 2 (night)	
NCA 1 All affected surrounding residential receivers	47	42	42 ²	42 ²	75
NCA 2 All affected surrounding residential receivers	45	40	40 ²	40 ²	75
All affected surrounding industrial receivers		75			-

Notes:

- Any construction work conducted outside the recommended standard hours is defined as follows
 - OOHW Period 1 (Day) – Saturdays 7 am to 8 am and 1 pm to 6 pm; Sundays and Public Holidays 8 am to 6 pm.
 - OOHW Period 2 (Evening) – Monday to Saturday 6 pm to 10 pm.
 - OOHW Period 3 – Monday to Saturday 10 pm to 7 am; Sundays and Public Holidays 6 pm to 8 am.
- As per NPF1 Section 2.3 night-time levels have been adjusted to be no greater than the noise level for day or evening due to noticed presence of insect noise during noise monitoring.

4.1.2 Construction road traffic noise

The project will require vehicle movements to facilitate the delivery and removal of earthworks spoil, equipment, and construction staff.

Potential impacts from construction traffic noise on public roads associated with the project is assessed using guidance from the Road Noise Policy (RNP). The application notes from the RNP detail the requirements for operation-generated traffic noise as follows:

For existing residences and other sensitive land uses affected by additional traffic on existing roads generated by land use developments, any increase in the total traffic noise level as a result of the development should be limited to 2 dB above that of the noise level without the development. This limit applies where the noise level without the development is within 2 dB of, or exceeds, the relevant day or night noise assessment criterion

Therefore, if the road traffic noise levels increase by more than 2 dBA as a result of the proposed construction traffic, and the criteria outlined in Table 3.4 are exceeded, mitigation options should be investigated. A 60 per cent increase in traffic is required to increase traffic noise levels by more than 2 dB

Table 4.3 Road traffic noise criteria for receivers on existing roads affected by the additional traffic from land use developments

Road type	External road traffic noise criteria ¹	
	Day, 7 am – 10 pm	Night, 10 pm – 7 am
Freeway/arterial/sub-arterial roads	60 dBA L _{eq} 15hr and increase > 2dB	55 dBA L _{eq} 9hr and increase > 2dB
Local roads	55 dBA L _{eq} 1hr	50 dBA L _{eq} 1hr

1. Façade corrected noise levels

4.2 Construction vibration

Vibration generating construction activities may lead to the following impacts risks:

- Cosmetic and structural building damage
- Loss of amenity due to perceptible vibration, termed human comfort.
- Damage to underground utilities

The following sections present vibration criteria for assessment and management purposes based on WSP’s experience.

4.2.1 Risk of structural / cosmetic damage

4.2.1.1 DIN 4150 -3

The German standard DIN 4150-3 provides a recommendation for maximum allowable peak particle velocity vibration levels (applied in any orthogonal direction v_i , with $i=x,y,z$) to reduce the risk of damage to structures. The DIN 4150-3 vibration criteria for short-term or transient vibration on structures are presented in Table 4.4 and in graphical form in Figure 4.1. DIN 4150-3 is typically adopted for assessing risk of building damage in contemporary major infrastructure projects in Australia and will be the primary vibration criteria for this assessment.

Table 4.4 DIN 4150-3 Structural damage vibration criteria, Peak Component Particle Velocity

Group	Type of structure	Peak Component Particle Velocity (PPV), mm/s				
		Measured at building foundation at a fundamental frequency range, all directions (x, y, z)			Plane of floor at uppermost storey horizontal direction (x,y)	Floor slabs vertical direction (z)
		1 Hz to 10 Hz	10 Hz to 50 Hz	50 Hz to 100 Hz ¹	All frequencies	All frequencies
1	Buildings used for commercial purposes, industrial buildings, and buildings of similar design <i>(Commercial/Industrial)</i>	20	20 - 40	40 - 50	40	20
2	Dwellings and buildings of similar design and/or use <i>(Residential)</i>	5	5 - 15	15 - 20	15	20
3	Structures that because of their particular sensitivity to vibration do not correspond to those listed in group 1 or 2. <i>(Heritage)</i>	3	3 - 8	8 - 10	8	20

Notes:

1. At frequencies above 100 Hz, the values given in this column may be used as minimum values

DIN 4150-3 Vibration Criteria

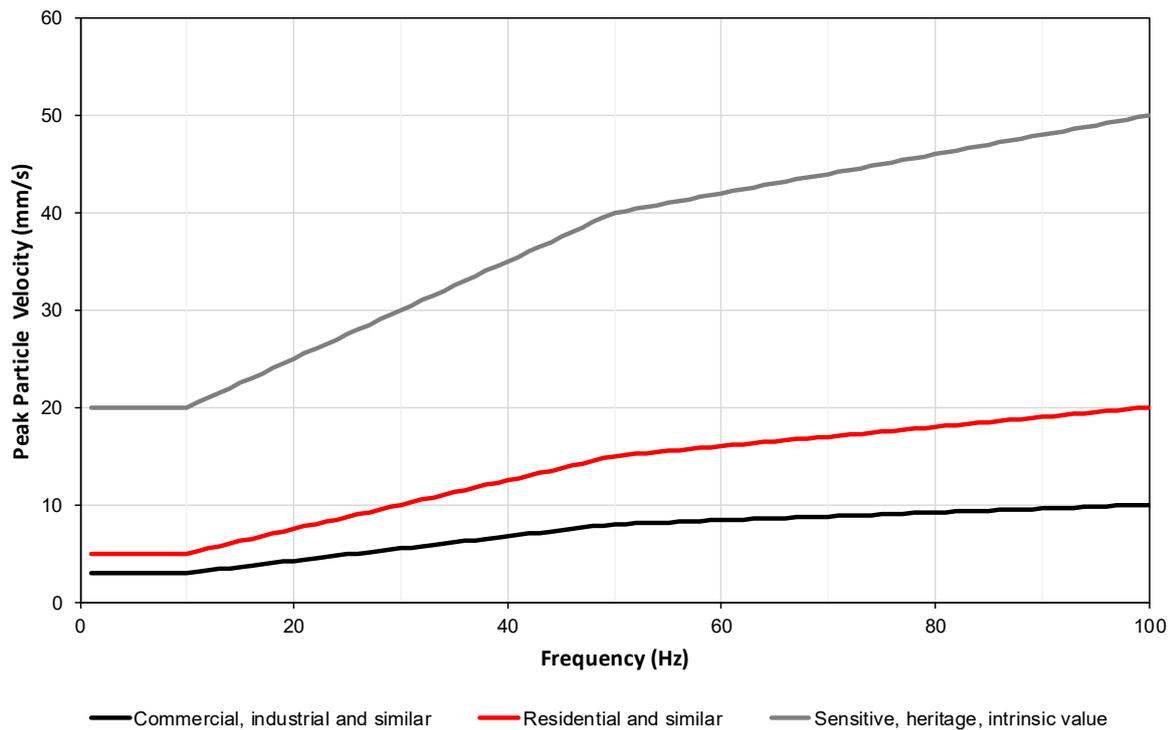


Figure 4.1 DIN 4150-3 Vibration Criteria

4.2.1.2 BS 7385-2

Importantly, cosmetic damage is regarded as minor in nature; it is readily repairable and does not affect a building's structural integrity. Damage of this nature is typically described as hairline cracks on drywall surfaces, hairline cracks in mortar joints and cement render, enlargement of existing cracks, and separation of partitions or intermediate walls from load bearing walls. If there is no determined significant risk of cosmetic damage, then structural damage is not considered a significant risk and is not further assessed.

There is currently no standards in Australia specifically addressing cosmetic damage to buildings from vibration. BS 7385 is proposed to be used for the assessment of cosmetic damage in buildings.

BS 7385 provides guidance on the 'evaluation and measurement of vibration in buildings' and defines guidance for categorising building damage in terms of 'cosmetic', 'minor' and 'major', providing limits for each.

These peak vibration limits are set so that the risk of 'cosmetic' damage in residential or commercial buildings is minimal. The limits have been set at the lowest level above which damage has been credibly demonstrated. The limits also assume that the equipment causing the vibration is only used intermittently, however if the equipment is used continuously (e.g. CFA piling), then the limits may need to be reduced by up to 50 per cent.

For 'minor' or 'major' vibrational damage to occur, BS 7385 states that vibration needs to be two times and four times (respectively for Group 1 and Group 2) the values shown in Table 4.5.

Guidance in BS 7385 also suggests that unless structurally unsound, heritage items should not be considered to be more sensitive than dwellings for the purposes of assessment.

Table 4.5 BS7385 Cosmetic damage vibration criteria, Peak Component Particle Velocity¹

Group	Type of structure	Peak Component Particle Velocity (PPV), mm/s		
		4 Hz to 15 Hz	15 Hz to 40 Hz	≥ 40 Hz
1	Reinforced or framed structures Industrial or heavy commercial buildings	50		
2	Un-reinforced or light framed structures Residential or light commercial buildings	15 – 20 ²	20 – 50	50

Notes:

- All values referred to are at the base building, on the side of the building facing the source vibration (where feasible)
- At frequencies below 4 Hz a maximum displacement of 0.6 mm (zero to peak) will not be exceeded

4.2.2 Human comfort

Vibration criteria for human comfort have been based on the guidelines set out in the NSW Department of Environment and Conservation *Assessing Vibration: A technical guide*, 2006 (AVTG).

The AVTG vibration levels for continuous vibration human comfort have been reproduced in Table 4.6 in terms of Peak Velocity (mm/s) for continuous vibration, referencing Table C1.1 of Appendix C of the AVTG.

It should be noted that construction work is generally considered as an intermittent source of vibration. Therefore, continuous vibration targets are considered conservative.

Table 4.6 Preferred and maximum vibration levels for continuous vibration (criterion relevant to the project emboldened)

Location	Assessment period	Peak velocity, mm/s	
		Preferred value	Maximum value
Critical working areas (e.g. hospital operating theatres, precision laboratories)	Day or night-time	0.14	0.28
Residences	Daytime	0.28	0.56
	Night-time	0.2	0.4
Offices	Day or night-time	0.56	1.1
Workshops	Day or night-time	1.1	2.2

4.2.3 Structural damage to buried services (DIN 4150-3)

As with cosmetic building damage, there is currently no standard in Australia for damage to underground services. Where possible, guidance should be sought from the asset owner regarding suitable construction vibration criteria for all underground utilities. In the absence of information from the asset owner, DIN 4150-3 has been referenced to provide indicative vibration criteria for buried utilities.

The vibration limits contained within DIN 4150-3 apply at the wall of the pipe and are outlined in Table 4.7.

The DIN 4150-3 standard defines short term and long-term vibration impacts as follows:

- Short term: Vibration which does not occur often enough to cause structural fatigue, and which does not produce resonance in the structure being evaluated.
- Long term: All types of vibration not covered by the definition of short-term vibration.

As a result, most construction activities would be considered long term as they have the potential to excite resonances within structures.

Table 4.7 DIN 4150 Part 3 – Damage to buried pipes vibration limits

Pipe material	Peak wall vibration velocity, mm/s	
	Short term works	Long term works
Steel	100	50
Clay, concrete, reinforced concrete, prestressed concrete, metal with or without flange (other than steel)	80	40
Masonry, plastic	50	25

Based on WSP's experience the following vibration levels are suggested for other underground utilities:

- Electrical cables and telecommunication cables (including fibre optic) – 50 mm/s.
- Gas pipelines - 20 mm/s (confirm with gas network supplier).

4.2.4 Damage to Sydney Water assets

The *Sydney Water Specialist Engineering Assessment Procedure*, Version 1, February 2021 (SEAP) nominates vibration limits for different asset types. These are presented in Table 4.8

Table 4.8 Sydney Water vibration limits

Asset type	Threshold values for velocity (PPV) measured on the asset in mm/s	
	Intermittent vibrations	Continuous vibrations
Brittle pipe assets – <ul style="list-style-type: none"> – Reinforced concrete (RC) – Vitrified Clay (VC) – Earthenware (EW) – Cast Iron Cement Lined (CICL) 	10	5

Asset type	Threshold values for velocity (PPV) measured on the asset in mm/s	
	Intermittent vibrations	Continuous vibrations
Ductile pipe assets <ul style="list-style-type: none"> — Steel Cement (mortar) Lined (SCL) — Ductile Iron Pipe (DI) — Polyvinyl Chloride (PVC) — Polyethylene (PE) — Polypropylene (PP) plastic pipe or tubing — Glass Reinforced Plastics (GRP) 	20	10
Masonry	3	
Unreinforced concrete	3	

5 Assessment of noise and vibration impacts

5.1 Construction methodology

This section provides a description of the key construction works for the project which has been prepared in consideration of the Construction Management Plan (CMP) for the Project and additional information provided by Multiplex.

5.1.1 *Activities and staging*

Based on information provided by Multiplex construction works for the Project have generally been grouped into five (5) types of activities as follows:

- Site establishment
- Civil and earthworks
- Structure works
- Fit out works
- Plant installation and commissioning

Site establishment activities will occur throughout the whole site as required to construct each of the different components of the Project. The remainder activities will occur sequentially for each one of the four buildings (A, B ,C and D) but overlapping at different times.

Ten (10) construction stages have been determined by Multiplex as follows:

Table 5.1 Construction staging

Building	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6	Stage 7	Stage 8	Stage 9	Stage 10
Building A	Site establishment	Civil and earthworks	Structure works	Structure works	Structure works	Structure works	Fit out works	Fit out works	Plant installation	Plant installation
Building B	Site establishment	Civil and earthworks	Civil and earthworks	-	-	Structure works	Structure works	Fit out works	Fit out works	Plant installation
Building C	Site establishment	Civil and earthworks	Civil and earthworks	Structure works	Structure works	Structure works	Fit out works	Fit out works	Plant installation	Plant installation
Building D	Site establishment	Civil and earthworks	Civil and earthworks	Civil and earthworks	-	Structure works	Structure works	Fit out works	Fit out works	Plant installation

5.1.2 Construction work hours

The hours of work will be as follows in line with the SSD consent conditions outlined in Section 3:

- 7am to 6pm Monday to Friday
- 8am to 1pm Saturday

If required Multiplex will seek agreement with the Planning Secretary for out-of-hours works in accordance with SSD consent conditions B1 and B2 outlined in Section 3.

5.2 Noise assessment

5.2.1 Noise modelling methodology

Prediction of construction noise impacts from the main external works has been completed using SoundPLAN version 9.1 noise modelling software, using the ISO 9613-2 calculation method. A three-dimensional model of the Project was developed, including elevation contours, locations of sensitive receivers, noise generating equipment and intervening buildings. The model considered noise sources, receivers and the effect of distance, ground topography, atmospheric attenuation and obstacles such as barriers and buildings.

The parameters used and values adopted in the noise modelling are presented in Table 5.2.

Table 5.2 Modelling parameters

Parameter	Input
Buildings	Building footprints and number of floors taken from aerial photography. Building heights and number of floors were estimated from Google Street View as follows: per floor 3 metres, pitched roof 2.5 metres.
Topography	5 m contours were extracted from the Digital Elevation Model (DEM) available from Geoscience Australia via Elvis Elevation and Depth.
Façade calculation	Impacts calculated at the most affected facade of nearby receivers.
Façade correction	Standard façade correction +2.5 dB
Prediction algorithm	CONCAWE. The propagation model consider: — Locations of noise sources and receivers — Geometrical spread of noise (divergence) — Atmospheric absorption — Ground effects — Meteorological effects — Barriers and in-plant screening — Reflections from surfaces.
Meteorological conditions	Concawe Category 4 (representing neutral conditions)
Ground surface / absorption	Model assumed a ground absorption coefficient of 0.5.

Parameter	Input
Sources	Equipment has been modelled as area source per stage/location. All equipment per work stage has been modelled to operate simultaneously over a 15-minute period, representing worst case conditions. Number of equipment per work stage has been confirmed by Multiplex in Section 5.2.3.
Source noise levels	Sound power levels used are listed in Section 5.2.3.
Source locations	The locations of the sources are expected to change throughout the duration of the works. Therefore, sources have been modelled along the footprint of the buildings to represent worst case conditions.
Source heights	Construction plant and equipment heights are modelled 2 metres above ground.
Receiver heights	Receivers have been placed at an elevation of 1.5 m

5.2.2 *Modelled scenarios*

Construction noise scenarios have been modelled in accordance with the activities and staging presented in Table 5.1.

5.2.3 *Equipment quantities and sound power levels*

Plant associated with each activity has been determined in consultation with Multiplex. Equipment sound power levels have been extracted from relevant industry standards and guidelines as per the SSDA Noise and Vibration Assessment for the Project.

The sound power levels and equipment quantities for each modelled scenario, corrected for approximate usage factor, are presented in Table 5.3. Where appropriate a penalty of 5 dB has also been considered for noise sources which may be particularly annoying to nearby residences in accordance with the ICNG.

It is noted that initially modelled scenarios, as presented in revisions 1 to 3 of this report, included the use of a concrete saw during Fitout Works. It is unlikely that this equipment will be used during this activity, therefore this noise source has been removed from the modelled scenarios that include Fitout Works (Stages 7, 8 and 9 as per Table 5.1).

Table 5.3 Equipment sound power levels per activity

Plant item	SWL (dBA)	Usage Factor (%)	Annoyance Factor	Site Establishment	Civil and earthworks	Structure works	Fitout works	Plant and commissioning
Tower Crane (Diesel)	113	100				2		
Backhoe loader	110	40			5	1		
Compactor	106	20			4			
Concrete pump	109	100				2		
Concrete mixer truck	108	100				2		
Mobile crane	103	20		1	4	1	1	1
Excavator (30t) + bucket attachment	110	40			4			
Excavator (30t) + hydraulic hammer	122	20	5		4			
Generator (Diesel)	103	100		1	3	1	1	
Loader (Front-end)	112	40			4	1		
Forklift (diesel)	106	50		1	1	1	1	1
EWP	106	20			1	2	1	1
Concrete saw	118	20	5			1		
Grinder	113	50	5		1	1	1	
Handheld power tools	108	50				1	1	1

Plant item	SWL (dBA)	Usage Factor (%)	Annoyance Factor	Site Establishment	Civil and earthworks	Structure works	Fitout works	Plant and commissioning
Flood lighting	90	100		1	1	1	1	1
Concrete trowels	106	100			4	2		
Grader	113	100			4			
Jack hammer	126	20	5		4	1		
Roller (Vibrator)	109	20	5		4			
Roller (Smooth-drum)	107	20		1	4			
Pavement laying machine	114	50			3			
CFA & Bored Piling Rig.	110	20			5			
Scraper	114	40			3			
Truck (>20 tonne)	108	40		2	4	1	1	1
Truck (water cart)	108	40		2	4	1		
Vehicle (light commercial e.g. 4WD)	103	10		2	3	2	2	1
Total sound power level (dBA)				112	133	134	122	116

5.2.4 *Predicted construction noise impacts*

A summary of the predicted construction noise levels is presented in Table 5.4, compared against the applicable NML. . Several exceedances o are predicted which are discussed further below.

Actual construction noise levels are expected to vary based on the location, number, and duration of operation of construction machinery, and therefore construction noise predictions have been presented as a worst-case, conservative scenario to represent the potential construction noise impact.

Table 5.4 Predicted noise levels for all assessed receivers for all construction stages

Receiver ID	NML (Standard hours/OOHW)	Predicted Noise Levels, $L_{eq(15min)}$ dBA									
		Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6	Stage 7 ³	Stage 8 ³	Stage 9 ³	Stage 10
I1	75/75	63	80⁴	78⁴	73	73	75	75	71	71	63
I2	75/75	60	79⁴	78⁴	75	73	74	70	56	52	50
I3	75/75	68	86⁴	85⁴	82⁴	81⁴	81⁴	77⁴	76⁴	67	67
R1	47/42	62	75	74	71	72	70	72	73	70	65
R2	47/42	58	70	69	67	68	67	69	71	68	63
R3	47/42	62	75	74	71	70	71	73	74	72	66
R4	47/42	59	71	70	68	67	68	70	73	71	65
R5	47/42	58	70	70	67	66	68	69	72	71	64
R6	47/42	48	61	61	58	58	59	62	63	62	55
R7	45/40	45	61	60	56	55	57	58	59	58	51
R8	45/40	47	60	59	57	56	57	58	59	58	51

Notes:

1. The cells with **orange bold text** show exceedances of both standard hours and OOH NMLs.
2. The cells with **green bold text** show exceedances of OOH NMLs only.
3. Predicted noise levels for these three stages have been revised based on the removal of concrete saw from the Fitout Works as noted before in Section 5.2.2.
4. The Highly Noise Affected criteria do not apply to industrial receivers. Therefore, these have not been highlighted in red as per previous report revisions.

5.2.5 *Modelled noise mitigation strategies*

Noise management and mitigation strategies are outlined in Section 6, including path controls identified in Section 6.3.

Whilst barriers located at the site boundary would have negligible effects in reducing sound, localised barriers and noise attenuations strategies will be implemented on a case-by-case basis when required and thus cannot be accurately modelled.

During the Fitout Works the use of handheld tools and grinders has been remodelled to include noise reductions associated with working inside the building façade. Predicted noise levels are presented in Table 5.5.

Table 5.5 Predicted noise levels for all assessed receivers for all construction stages – with handheld tools and grinders inside building structure

Receiver ID	NML (Standard hours/OOHW)	Predicted Noise Levels, L_{eq} (15min) dBA									
		Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6	Stage 7 ³	Stage 8 ³	Stage 9 ³	Stage 10
I1	75/75	63	80⁴	78⁴	73	73	75	75	59	59	63
I2	75/75	60	79⁴	78⁴	75	73	74	70	55	50	50
I3	75/75	68	86⁴	85⁴	82⁴	81⁴	81⁴	77⁴	76⁴	67	67
R1	47/42	62	75	74	71	72	70	65	61	64	65
R2	47/42	58	70	69	67	68	67	63	58	61	63
R3	47/42	62	75	74	71	70	71	70	61	64	66
R4	47/42	59	71	70	68	67	68	67	59	62	65
R5	47/42	58	70	70	67	66	68	66	58	61	64
R6	47/42	48	61	61	58	58	59	59	48	52	55
R7	45/40	45	61	60	56	55	57	57	44	47	51
R8	45/40	47	60	59	57	56	57	56	45	48	51

Notes:

1. The cells with **orange bold text** show exceedances of both standard hours and OOH NMLs.
2. The cells with **green bold text** show exceedances of OOH NMLs only.
3. Predicted noise levels for these three stages have been revised based on the removal of concrete saw from the Fitout Works as noted before in Section 5.2.2.
4. The Highly Noise Affected criteria do not apply to industrial receivers. Therefore, these have not been highlighted in red as per previous report revisionse

5.2.6 Discussion

It should be noted that the noise predictions are worst-case as they assume that all equipment will be in use simultaneously and continuously during the assessment period. In addition, these predictions are made with the construction activity at the closest location to the receiver. Noise levels may therefore be reduced when activity is further away and less equipment is in use as per the construction schedule

The outcomes of the assessment show that the highest noise impacts are predicted to occur under Stages 2 and 3 for the industrial receivers, when the noisiest activities such as the use of jackhammers, excavators, scrapers, pavement laying machines, graders and piling will take place. Predicted noise levels for Industrial receivers generally remain within the 75 dB NML for most activities. Noise levels for Civil and earthworks and Structure Works are predicted to exceed the 75 dB NML at receiver I3.

Exceedances above the standard hours and OOH NMLs have been predicted for all stages at most residential receivers, however none are predicted above the Highly Affected NMLs.

Mitigation and management measures are required to be implemented as presented in Section 6. As shown in Table 5.5, moving handheld tools and grinders inside of the structure during Fit-out works, causes a significant reduction in noise levels to residential receivers (up to 15 dB) as shown specifically in the predicted noise levels for Stages 8 and 9 when Fit-out works are the primary noise generating activity.

5.3 Vibration assessment

Certain construction activities will require the use of vibration intensive equipment that may affect the nearest sensitive receivers. The most vibration intensive activities/equipment proposed to take place during construction include:

- Vibratory roller
- Excavator with large hydraulic hammer
- Pile boring
- Jackhammer

5.3.1 Cosmetic damage and human comfort

The CNVG includes indicative safe working distances to achieve the cosmetic damage and human comfort vibration criteria. These are presented in Table 5.6.

It should be noted that the distances are indicative only and results may vary depending on the activity, equipment, local ground, and receiver conditions.

Table 5.6 Indicative vibration safe working distances for building damage

Plant item	Rating	Indicative safe working distance, cosmetic damage	Indicative safe working distance, human comfort
Vibratory roller	< 50 kN (Typically 1-2 tonnes)	5 m	15 m to 20 m
	< 100 kN (Typically 2-4 tonnes)	6 m	20 m
	< 200 kN (Typically 4-6 tonnes)	12 m	40 m

Plant item	Rating	Indicative safe working distance, cosmetic damage	Indicative safe working distance, human comfort
	< 300 kN (Typically 7-13 tonnes)	15 m	100 m
	> 300 kN (Typically 13-18 tonnes)	20 m	100 m
	> 300 kN (> 18 tonnes)	25 m	100 m
Large hydraulic hammer	1600 kg - 18 to 34t excavator	22 m	73 m
Jackhammer	Hand held	1 m (nominal)	2 m
Bored or CFA piling	≤ 800 mm	2 (nominal)	4

Receiver R1 is potentially within the indicative safe working distance for cosmetic damage due to the use of vibratory rollers and large hydraulic hammer. All other receivers are outside the indicative safe working distances for cosmetic damage.

Receivers R1, R3 and I3 are potentially within the indicative safe working distance for human comfort for vibratory rolling and large hydraulic hammers.

Receiver R4 is potentially within the indicative safe working distance for human comfort for vibratory rolling and large hydraulic hammers.

Mitigation and management measures are required to be implemented as presented in Section 6.

5.3.2 *Damage to Sydney Water assets*

There is a Sydney Water sewer pipe located in the northwest corner of the Project site along with two maintenance structures (manholes).

The section of pipe connecting the two manholes is located approximately 4.9 m below the ground surface level. Another section is located approximately 9 m below the ground surface level, connecting to the sewer network surrounding the site.

Works will take place directly above the assets as required to construct an internal road for the Project as shown in Figure 5.1, with the likely most affect assets highlighted in yellow.

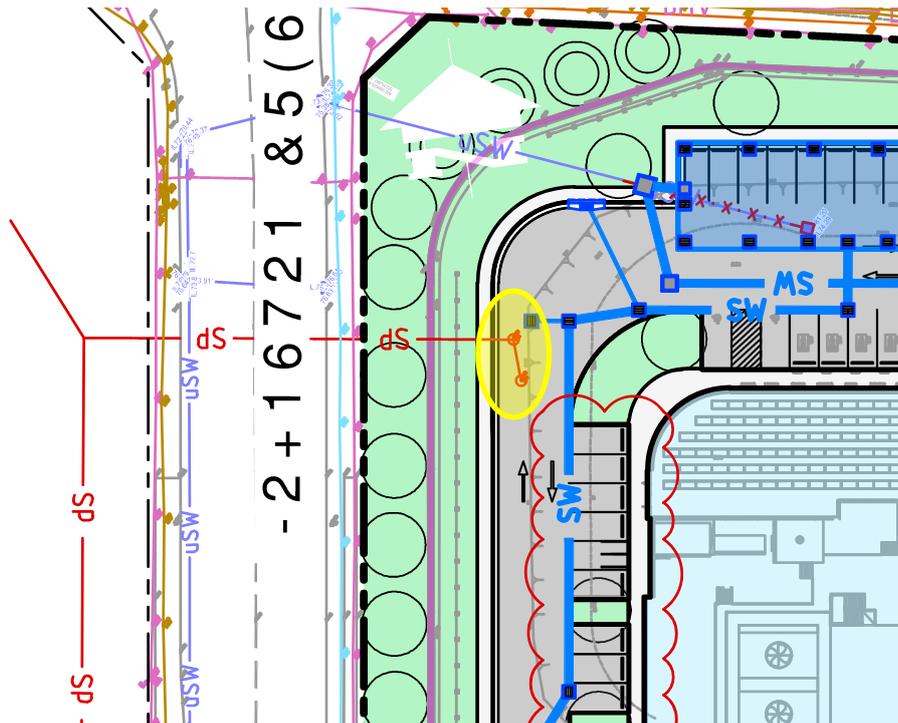


Figure 5.1 Sydney Water assets directly beneath new internal road

Multiplex have indicated that the pipes are ≤ 300 mm diameter PVC pipes. At this stage it is not clear what the material of the manholes is, but it is assumed that these are reinforced concrete.

An assessment of construction vibration impacts onto the sewer pipe and the manholes is presented in the following sections.

5.3.2.1 Assessment methodology

Section 4.6 of the AVTG refers to the US Federal Transit Administration's (FTA) *Transit Noise and Vibration Impact Assessment Manual* (1995). The FTA uses the following formula to predict the PPV at a receiver, based on a point source of vibration under normal propagation conditions.

$$PPV_{receiver} = PPV_{ref} \cdot \left(\frac{d_{ref}}{d} \right)^{1.5}$$

Where:

- $PPV_{receiver}$ = peak particle velocity at the receiver (the water main) (mm/s)
- PPV_{ref} = peak particle velocity of the source, measured at the reference distance (mm/s)
- d_{ref} = reference distance for the vibration source (m)
- d = distance from the source to the receiver (the water main) (m)

Section 4.6 of the AVTG guideline also refers to the Transport Research Laboratory's (TRL) *Groundborne vibration caused by mechanised construction works* (2000). The TRL uses the following formula to predict the PPV at a receiver, based on expected and indicative plant specifications.

$$v_{res} = k_s \sqrt{n} \cdot \left(\frac{A}{x + w} \right)^{1.5}$$

Where:

v_{res} = peak particle velocity at the receiver (the water main) (mm/s)

k_s = scaling factor, for probability of predicted value being exceeded, where;

- $k_s = 75$, with a 50% probability of the vibration level being exceeded
- $k_s = 143$, with a 33% probability of the vibration level being exceeded
- $k_s = 276$, with a 5% probability of the vibration level being exceeded

n = number of sources (vibratory drums)

A = nominal amplitude of the vibrating roller (mm)

x = distance along the ground surface from the roller (m)

w = width of the vibrating drum (m)

Note: Valid for distances 2 – 110 m

The two methodologies have been used depending on the type of equipment expected to be used for the works.

5.3.2.2 Inputs

Inputs adopted for the vibration assessment are listed in Table 5.7 and Table 5.8, for calculations following the FTA and TRL methodologies respectively.

Table 5.7 Vibration assessment inputs – FTA method

Equipment	Peak particle velocity of the source, PPV_{ref}	Reference distance, d_{ref}	Distance from source, d	
			To sewer pipe	To manhole
5T excavator with auger	1.15 mm/s	1.0 m	4.9 m	0.2 m (*It is unclear what the minimum distance will be to the manholes. The distance noted is assumed and indicative for assessment purposes)
14T excavator	1.00 mm/s	3.0 m		
Plate compactor	3.80 mm/s	1.0 m		
12T Roller (static)	2.30 mm/s	4.0 m		
Asphalt profiler	4 mm/s	5.0 m		
Asphalt paver	1 mm/s	5.0 m		
Loaded trucks	1.93 mm/s	7.6 m		

Table 5.8 Vibration assessment inputs – TRL method

Equipment	Type	Scaling factor, k_s	Number of vibratory drums, n	Nominal amplitude, A (mm)	Drum width, w (m)
Vibratory roller	Continuous	276 (95% confidence)	2	0.64	1.5

5.3.2.3 Assumptions

- Estimated vibration levels have been based on previously published and measured data for similar equipment types. They are not based on the actual plant items proposed to be used by the contractor nor necessarily based on comparable site conditions and geology. As such there is inherent risk in relying on these estimated vibration levels

and associated offset distances with reasonable level of confidence, particularly where estimated vibration levels are outside of the reference data range.

- The distance from the works to the manholes has been assumed as minimal. It is not clear exactly what this will be but 0.2 m has been assumed for assessment purposes
- The following assumptions have been made regarding construction plant:
 - A plate compactor has been assumed for compaction works
 - A static 12T roller and an 8T CAT CB7 vibratory roller have been used to determine safe working distances, offering a range based on equipment choice.
 - It is understood that rock breaking is not included in the construction method and therefore has not been assessed.

Ground vibration is attenuated by a variety of factors as it propagates away from the source. For the purpose of this desktop assessment only geometric spreading has been considered.

5.3.2.4 Estimated vibration levels

Results are summarised in Table 5.9 as the estimated Peak Particle Velocity at the Sydney Water asset from the nearest proposed works. Cell text that is **highlighted red** indicates a non-compliance for a particular plant at the corresponding Sydney Water asset

Table 5.9 Estimated vibration results at minimum proposed working distances

Sydney Water asset	Type	Threshold values for velocity (PPV) (mm/s) ¹	Approx. minimum proposed distance, m	Estimated vibration velocity level, (PPV) (mm/s)							
				5T excavator with auger	14T excavator	Plate compactor	12T Roller (static)	Asphalt profiler	Asphalt paver	Loaded trucks	Roller (Vibrator) CAT CB7 (8T) (High)
Sewer pipe	225 PVC	10	4.9	0.1	0.5	0.4	1.7	4.1 ²	1.0 ²	3.7 ²	12.3
Manhole	1500 RC	5	0.2	12.9	58.1²	42.5	205.7²	500²	125²	454²	90.2²

Notes:

1. Results are presented against continuous vibration thresholds as worst case
2. Outside reference measurement range

5.3.2.5 Estimated minimum safe working distances

Estimated minimum safe working distances are summarised in Table 5.10 and Table 5.11 showing the minimum distance between the vibration source and the Sydney Water asset to meet the vibration threshold for Peak Particle Velocity. Cell text that is **highlighted red** indicates a non-compliance for a particular plant at the corresponding Sydney Water asset.

Table 5.10 Estimated minimum safe working distances – continuous vibration

Sydney Water asset	Type	Threshold values for velocity (PPV) (mm/s)	Estimated minimum safe working distance from source to asset, m ¹							
			5T excavator with auger	14T excavator	Plate compactor	12T Roller (static)	Asphalt profiler	Asphalt paver	Loaded trucks	Roller (Vibrator) CAT CB7 (8T) (High)
Sewer pipe	225 PVC	10	0.2	0.6	0.5	1.5	2.7	1.1	2.5	6.4
Manhole	1500 RC	5	0.4	1.0	0.8	2.4	4.3	1.7	4.0	10.7

Sydney Water asset	Type	Threshold values for velocity (PPV) (mm/s)	Estimated minimum safe working distance from source to asset, m ¹							
			5T excavator with auger	14T excavator	Plate compactor	12T Roller (static)	Asphalt profiler	Asphalt paver	Loaded trucks	Roller (Vibrator) CAT CB7 (8T) (High)
Notes:										
1. Minimum distance from works to receiver										

Table 5.11 Estimated minimum safe working distances – intermittent vibration

Sydney Water asset	Type	Threshold values for velocity (PPV) (mm/s)	Estimated minimum safe working distance from source to asset, m ¹							
			5T excavator with auger	14T excavator	Plate compactor	12T Roller (static)	Asphalt profiler	Asphalt paver	Loaded trucks	Roller (Vibrator) CAT CB7 (8T) (High)
Sewer pipe	225 PVC	20	0.1	0.4	0.3	0.9	1.7	0.7	1.6	3.7
Manhole	1500 RC	10	0.2	0.6	0.5	1.5	2.7	1.1	2.5	6.4
Notes:										
1. Minimum distance from works to receiver										

5.3.2.6 Discussion

The desktop screening assessment indicates that vibration levels from all of the proposed construction activities are likely to exceed Sydney Water’s limits at the manholes based on the assumed minimum separation distance.

The vibratory roller specifically is also expected to result in vibration levels above the Sydney Water’s limits at the sewer pipe.

It should be noted that the estimated vibration levels fall outside the range of available reference data in some instances, particularly in relation to the predictions for the vibration levels at the manholes, and therefore may not be reliable. Accordingly, it is strongly recommended that alternative low-vibration construction methods for those activities predicting exceedances be considered and supported by trial vibration measurements.

Where assets are at a greater distance from vibration intensive works than the estimated safe working distances (as outlined in Section 5.3.2.5), vibration levels are expected to remain within acceptable limits.

It is strongly recommended that real-time vibration monitoring be carried out at the commencement of, and during identified vibration intensive works to manage vibration risk. Refer to Section 7.3 for monitoring requirements.

6 Noise and vibration management and mitigation measures

6.1 Management measures

In consideration of the predicted exceedances of Project NMLs outlined in Section 5, the mitigation and management measures outlined in Table 6.1 shall be implemented to reduce the disturbance to the nearby receivers during the construction

Table 6.1 Management controls

Action required	Applies	Details
Implement community consultation measures (refer to Section 7.2)	Noise Vibration	Letter box drop to potentially affected receivers. Participate in meetings with community members
Site inductions.	Noise Vibration	All employees, contractors and subcontractors are to receive a noise specific induction as part of their site induction. The induction must at least include: <ul style="list-style-type: none"> — All relevant project specific and standard noise and vibration mitigation measures. — Relevant licence and approval conditions. — Permissible hours of work (i.e. tools down at 6pm Monday to Friday and 3pm Saturday, assuming works will be permitted after 1pm) — Any limitations on high noise generating activities. — Location of nearest sensitive receivers. — Construction employee parking areas. — Designated loading/unloading areas and procedures. — Site opening/closing times (including deliveries). — Environmental incident procedures.
Behavioural practices.	Noise	<ul style="list-style-type: none"> — Machinery will be operated in a manner which reduces maximum noise level events such as shaking excavator buckets, dropping materials into trucks from height or steel on steel contact. — No swearing or unnecessary shouting or loud stereos/radios on site. — No dropping of materials from height, throwing of metal items and slamming of doors.
Monitoring.	Noise Vibration	A monitoring program as specified in Section 7.4 is to be carried out.

Action required	Applies	Details
Plan worksites and activities to minimise noise and vibration	Noise Vibration	Plan traffic flow, parking and loading/unloading areas to minimise reversing movements within the site. Forward-in / forward-out movements are preferred. Prohibit queueing of idling vehicles prior to commencement of work
Complaint handling.	Noise Vibration	A complaint handling procedure as specified in Section 7.2 is to be carried out.
Construction hours and scheduling	Noise	Where feasible and reasonable, construction and deliveries shall be carried out during normal working hours. Work generating high noise levels shall be scheduled during less sensitive time periods. Noisy works closest to the sensitive receivers should be undertaken during the less sensitive periods and move away as the evening progresses to increase the offset distance between the works and the receivers. Works must not occur between 10pm and 7am.
Approvals	Noise Vibration	Proposed works outside normal working hours must be communicated to the relevant authority for approval.
Sequencing operations	Vibration	Sequencing operations so that vibration-causing activities do not occur simultaneously if possible.
Maintenance of plant	Noise Vibration	All plant and tools are to be regularly maintained and checked to ensure that they are running correctly and not producing excessive noise emissions. Periodic inspection of equipment shall be conducted to ensure that they have been maintained correctly and are not generating excessive noise.

6.2 Source controls

The source mitigation measures outlined in Table 6.2 shall be implemented to reduce the potential disturbance to the nearby receivers during the construction.

Table 6.2 Source controls

Action Required	Applies	Details
Equipment selection	Noise Vibration	Alternative, quieter and less vibration emitting construction methods shall be used where feasible and reasonable. For example: <ul style="list-style-type: none"> - 30t dozer instead of an excavator with hydraulic hammer - Use of electric cranes - Hydraulic bursters - Road saws

Action Required	Applies	Details
		Number of plant operational out of hours kept to the minimum for that task.
Rock breaker mitigation		Quieter construction methods will be used for rock breaking where feasible and reasonable. This may include bulldozer mounted rippers or other methods such as rotary grinders (where suitable). Where alternative methods are not feasible and reasonable rockbreaker operations will be noise attenuated in the form of a rockbreaker acoustic shroud (example https://www.hushtecsolutions.com/rock-breaker-shroud/)
Maximum noise levels	Noise	The noise levels of plant and equipment must have operated SWLs equal to or below that specified in Section 5.2.3
Rental plant and equipment	Noise	The noise levels of plant and equipment items are to be considered in rental decisions.
Use and siting of plant	Noise Vibration	Simultaneous operation of noisy plant within discernible range of a sensitive receiver is to be avoided if possible. The offset distance between noisy plant and adjacent sensitive receivers is to be maximised. Plant used intermittently to be throttled down or shut down when not in use. Noise-emitting plant to be directed away from sensitive receivers if possible. All engine and enclosures panels to be kept closed. Use non-impactful techniques to remove debris from piling rigs (e.g., removal of debris by hand tools, use of excavator attachment)
Noisy fabrication work	Noise	Consideration for the off site manufacture of typically noisy fabrication work (for example, within enclosed factory premises) and then transport to site. This may include the following elements: <ul style="list-style-type: none"> — Precast columns — OSD tanks — Pile cages — Precast lift cores — Generator skids — Pre-cast facade
Generators	Noise	Use mains power supply rather than use generators. Switch off generators when not in use, particularly during out of hours work / peak customer use for station works. Locate generators away from residences and behind structure that could provide acoustic shielding.

Action Required	Applies	Details
		<p>Use one larger generator to power multiple plant items (ensuring safe cabling).</p> <p>Use mobile noise curtains around generators.</p> <p>Mark location of Mains power and generators on Site Plan.</p>
Plan worksites and activities to minimise noise and vibration	Noise Vibration	<p>Plan traffic flow, parking and loading/unloading areas to minimise reversing movements within the site. Forward-in / forward-out movements are preferred.</p> <p>Prohibit queueing of idling vehicles prior to commencement of work</p>
Non-tonal reversing alarms	Noise	<p>Non-tonal reversing beepers (or an equivalent mechanism) shall be fitted and used on all construction vehicles and mobile plant regularly used for any out of hours' work.</p>
Compression Brakes	Noise	<p>Truck drivers must limit compression braking as far as practicable.</p>
Hand tools	Noise	<p>As much as practical the use of hand tools such as grinders, impact wrenches, hammers etc. shall be used in specifically designated areas as far as possible from sensitive receivers and preferably separated by a barrier if possible. Metal on metal contact shall be avoided where possible.</p>
Deliveries and truck movements	Noise	<p>Where feasible and reasonable, deliveries will be carried out during the standard daytime working hours</p> <p>Plan traffic flow, parking and loading/unloading areas to minimise reversing movements within the site. Forward-in / forward-out movements are preferred to reduce the use of reversing beepers.</p> <p>Truck drivers will limit compression braking as far as practicable.</p> <p>Steel chain type tie downs will not be use. Vehicles to be fitted with straps instead.</p> <p>Reduce the number of vehicle trips to and from the site – organise amalgamated loads rather than using a number of vehicles with smaller loads.</p> <p>Show material transport plans in Works Schedule.</p> <p>Loading and unloading of materials is to occur as far as possible from sensitive receivers.</p> <p>Loading/unloading areas to be shielded if close to sensitive receivers.</p> <p>Plan traffic flow, parking and loading/unloading areas to minimise reversing movements within the site, such as by including drive-through for parking and deliveries.</p> <p>Show traffic flow, loading/unloading areas on Site Plan.</p>

Action Required	Applies	Details
		<p>Select site access points and roads as far as possible away from sensitive receivers</p> <p>Nominate an off-site truck parking area away from residences, for trucks arriving prior to gates opening.</p> <p>These measures will be communicated to all truck drivers accessing the site.</p>

6.3 Path controls

The mitigation path controls outlined in Table 6.3 shall be implemented to reduce the disturbance to the nearby receivers during the construction.

Table 6.3 Path controls

Action Required	Applies	Details
Shield stationary noise sources such as pumps, compressors, fans etc.	Noise	Stationary noise sources shall be enclosed or shielded whilst ensuring that the occupational health and safety of workers is maintained.
Shield sensitive receivers from noisy activities	Noise	Use structures to shield residential receivers from noise such as site shed placement;
Shield sensitive receivers from noisy activities	Noise	Use of fencing; erection of temporary noise barriers/site hoardings. Primarily during louder work stages

7 Compliance management

7.1 Training

All employees, contractors and utility staff working on site will undergo site induction training relating to environmental issues, including noise and vibration management. The induction training will address the following elements related to noise and vibration management:

- The existence and requirements of this sub-plan
- Work hours and the requirement for strict compliance
- Delivery hours, access routes and loading / unloading locations
- Noise mitigation measures
- Project environmental responsibilities
- Location of sensitive noise receivers
- The importance of regular plant maintenance.

Records would be kept of all personnel undertaking the site induction and training, including the contents of the training, date and name of trainer/s.

Key staff will undertake more comprehensive training relevant to their position and/or responsibility. This training may be provided as “toolbox” training or at a more advanced level by the Environmental or Safety Manager or delegated representatives.

7.2 Community consultation

Multiplex has developed a Stakeholder and Communications Plan (SCMP) to establish the approach to stakeholder communication and consultation activities that Multiplex will undertake to ensure positive outcomes are achieved for the community.

Community consultation will be undertaken with all noise sensitive receivers within < 400m from the project boundary and will include the following activities:

- Engaging with the community to keep them informed, for example community meetings with community and workers.
- Advising the community of work to be undertaken. Notifications will occur at least 24 hours prior to commencement of any out-of-hours works and work where any exceedance of the Project NMLs has been predicted..
- Installing and maintaining a site information board at the front of the site with contact details, hours of operations, after-hours emergency contact details, and regular information updates. The board shall be located to be visible from the outside boundary.
- Recording and managing any complaints.

7.2.1 Consultation undertaken to date

Multiplex engaged with neighbouring properties to the east of the Project site on Friday, 6 February. As part of this engagement, letters were issued to residents addressing the SSDA conditions related to visual mitigation (Condition B59(a)) and noise mitigation (Conditions B5(c)(iv) and (v)), as outlined in Section 3). Two versions of the letter were

distributed: one covering both visual and noise mitigation measures, and another focused solely on noise mitigation. Copies of these letters are provided in Appendix A.

A summary of the community consultation undertaken, including the issues raised by residents and the mitigation strategies proposed by Multiplex where required, is presented in the table below.

Table 7.1 Summary of community consultation undertaken

Date	Address	Attendees	Comments	Mitigation strategies
Friday 6 February 2026 Approx. 12pm	321-325 Burley Road	Resident Ivan Amaro – MPX Rohan Makkar - MPX	Overview of mitigation strategies discussed. Resident noted concerns regarding noise from permanent generator location and permanent fans. No further questions or concerns on proposed visual or noise mitigation measures. Dust suppression was the main concern with proposed mitigation strategies discussed.	Multiplex advised resident that the generators were relocated behind noise-attenuating louvers. This was a revision to the original design in response to community feedback. Multiplex advised dust suppression managed via water tanks, sprinklers where required. Multiplex will provide dust monitoring and reporting as required in the CEMP.
Friday 6 February 2026 Approx. 12:15pm	285 Burley Road	Resident Ivan Amaro – MPX Rohan Makkar - MPX	Overview of mitigation strategies discussed. Resident asked about the visual height of the building. No further questions or concerns on proposed visual or noise mitigation measures. Dust suppression raised as the main concern with proposed mitigation strategies discussed. Did not raise anything further.	Multiplex showed renders of the building to indicate visual height. Multiplex advised dust suppression managed via water tanks, sprinklers where required. Multiplex will provide dust monitoring and reporting as required in the CEMP.

Date	Address	Attendees	Comments	Mitigation strategies
Friday 6 February 2026 Approx. 12:20pm	315-319 Burley Road	Resident Ivan Amaro – MPX Rohan Makkar - MPX	Overview of mitigation strategies discussed. Dust suppression noted as the main concern with proposed mitigation strategies discussed. No issues with construction noise.	Multiplex advised dust suppression managed via water tanks, sprinklers where required. Multiplex will provide dust monitoring and reporting as required in the CEMP
Friday 6 February 2026 Approx. 12:25pm	301 – 313 Burley Road	Resident Ivan Amaro – MPX Rohan Makkar - MPX	Overview of mitigation strategies discussed. Did not note any concerns.	-
Friday 6 February 2026 Approx. 12:30pm	287 Burley Road	Resident Ivan Amaro – MPX Rohan Makkar - MPX	Overview of mitigation strategies discussed. Did not note any concerns.	-

Further community engagement will continue to be carried out as required throughout the delivery stages.

7.3 Complaints handling

The SCMP for the Project establishes the following protocol for handling complaints:

- All complaints received by Multiplex will be managed by the Community and Stakeholder Manager in consultation with the Project Manager.
- All complaints will be recorded and resolved where appropriate by the Community and Stakeholder Manager.
- A register will be maintained outlining the source and nature of the complaint and corrective action will be reported and documented.
- The complaint will be investigated promptly to determine the cause and corrective action that will be required to be planned and implemented.
- Complainants will be acknowledged by telephone within one (1) working day.
- Complainants will be informed of the corrective action that has been taken to mitigate or otherwise resolve the adverse effects.

The approach to resolving complaints will include:

- Confirming the nature of the complaint and the requested action.
- If the response requires alternative resolution, the Community and Stakeholder Manager will contact appropriate project staff for input and discussion of options for resolution. If a major issue, the matter will be escalated within Multiplex and the client will be informed and involved as appropriate.

- The resolution approach is to be mutually acceptable where possible to the complainant, Multiplex and the client as required. Resolution would be actively sought to ensure the project continues to move forward.

A complaints register will be developed, maintained and reported as part of the project reporting requirements.

7.4 Noise and vibration monitoring

The monitoring of noise and vibration is an essential part of assessing impacts and determining compliance with approval conditions and community concerns. Noise and vibration monitoring are scheduled to document impact, assist in the administration of any community enquiries and to support construction activities.

7.4.1 Methodology and locations

7.4.1.1 External receivers

Based on the predicted construction noise levels in Section 5.2.4, the following noise monitoring plan is recommended

It is recommended to install three (3) unattended noise and vibration monitors at the following locations:

- West boundary of R1
- West boundary of R3
- South boundary of I3

Monitoring should be continuous for at least until the completion of Stage 3. Additional monitoring must be completed in the event of a community complaint.

In addition, it is recommended to conduct attended noise and vibration measurements during specific activities that have the potential to cause high noise impacts (e.g. jackhammering) to better characterise the noise impacts and inform potential mitigation controls.

7.4.1.2 Sydney Water assets

Vibration monitoring shall be conducted at Sydney Water assets where works take place within the estimated impact distances in Table 5.10. A detailed Vibration Monitoring Plan (VMP) should be developed, covering monitoring locations, methods, trigger levels, response actions, roles/responsibilities and reporting for approval by Sydney Water.

It is recommended that pre-construction vibration monitoring is conducted to measure ambient/background vibration at the proposed monitoring points to establish baseline PPV and frequency content.

Additionally, it is recommended to undertake short, controlled trials at the commencement of vibration intensive work to validate site-specific minimum working distances, vibration transfer rates and instrument placement prior to construction works. The results of these trials will be used to update the monitoring plan as required.

Where feasible, use borehole-mounted vibration sensors in close proximity to the vibration sensitive asset (or ideally firmly fixed to the structure).

7.4.2 Instrumentation

Noise monitors shall:

- Log noise continuously in 15-minute intervals.
- Log the following noise indices as a minimum: L_{Aeq} , L_{A01} , L_{A10} , L_{A90} , L_{Amax} .
- Meet the instrumentation specification requirements of Australian Standard IEC 61672.1-2004 *Electroacoustics – Sound level meters* (AS IEC 61672), Australian Standard AS1055.1 *Acoustics – Description and measurement of environmental noise* and carry current calibration certificates from a NATA approved calibration facility.

- Be capable to send alerts based on trigger levels in line with the NMLs in Section 4.1.1.4.
- Be fitted with wind shields, and calibrated prior to measurements to measure drift.
- Comply with the requirements of AS 1259.2-1990. “Acoustics- Sound Level Meters, Part 2- Integrating and Averaging” and carry appropriate NATA certification.

Vibration monitors shall:

- Log vibration continuously as PPV mm/s.
- Cover the dominant activity band (typically ~4–250 Hz) at suitable sample rates to capture transients.
- Be capable of sending alerts based on trigger levels in line with the vibration criteria in Section 4.2.
- Be calibrated prior to measurements to measure drift.

In the event of trigger levels being exceeded, work would cease immediately and suitable mitigation and / or management measures would be considered.

7.4.3 *Monitoring reports*

The results of any monitoring undertaken will be documented in monthly reports. These should include:

- Date, time and location of monitoring.
- Name of person conducting the monitoring.
- Statistical descriptors to be recorded for 15 minute intervals include L_{Aeq} , L_{AMax} and L_{A90} levels and the primary noise sources contributing to each statistic.
- PPV mm/s vibration levels
- Details of site activity, environmental noise characteristics and weather to be noted.

Where noise and vibration monitoring indicates exceedances of the project construction noise and vibration criteria outlined in Section 4, the non-conformance procedures outlined in Section 7.5 shall be followed.

7.5 Non-compliances

All results of monitoring will be reviewed and maintained by the Multiplex Site Manager. Issues of concern or non-compliance will be documented and discussed with NEXTDC with the view of resolving the issue or determining a way forward. NEXTDC will be informed of all non-compliances within 24 hours of identification and will include sufficient detail to describe the nature of the issue, immediate actions taken, and any potential environmental impacts.

Where identified exceedances may impact the safety of people or property, work at the concerned site shall cease immediately. Typical emergency situations that may result in substantial noise and/or vibration impacts may include substantial noise events during out of hours works or vibration causing significant structural damage to nearby buildings and/or Sydney Water assets.

These events are considered highly unlikely, however in the event of such an event occurring:

- 1 Work would cease immediately
- 2 Any occupants would be evacuated with due consideration to safety
- 3 The area would be secured to prevent unauthorised access
- 4 If relevant, a structural assessment would be undertaken and the results compared with any previous dilapidation survey

- 5 Where any damage is associated with construction, rectification work would be implemented or compensation agreed.

An Environmental Incident Report form would be completed by the Multiplex Site Manager for any incident causing a noise and / or vibration impact on local residences. This form will include investigation outcomes and proposed corrective and preventative actions. Multiplex will implement agreed actions and monitor their effectiveness to prevent recurrence.

7.6 Reporting

Records relating to noise and vibration on the project shall be maintained for a period of four years in the Site Environmental register or equivalent. These records shall include details related to noise and vibration management, including:

- Training / inductions records
 - Equipment inspections
 - Noise or vibration monitoring reports
 - Audit or reviews
 - Communication regarding noise management
 - Details of complaints.
-

7.7 Plan review

Continual improvement of this plan will be achieved by the continual evaluation of environmental management performance against proposed control measures, environmental policies, objectives and targets for the purpose of identifying opportunities for improvement.

The continual improvement process will be designed to:

- Identify areas of opportunity for improvement of environmental management which leads to improved environmental performance.
- Determine the root cause or causes of non-conformances and deficiencies.
- Develop and implement a plan of corrective and preventative action to address non-conformances and deficiencies.
- Verify the effectiveness of the corrective and preventative action.
- Document any changes in procedures resulting from process improvement.
- Make comparisons with objectives and targets.

Changes to this plan will be approved by Multiplex representatives and stakeholders (if required) and documented in the document control section for each revision. A copy of the updated plan and changes will be distributed to all relevant stakeholders.

8 Limitations

This Report is provided by WSP Australia Pty Limited (WSP) for Multiplex (Client) in response to specific instructions from the Client and in accordance with WSP's proposal and agreement with the Client (Agreement).

8.1 Permitted purpose

This Report is provided by WSP for the purpose described in the Agreement and no responsibility is accepted by WSP for the use of the Report in whole or in part, for any other purpose (Permitted Purpose).

8.2 Qualifications and assumptions

The services undertaken by WSP in preparing this Report were limited to those specifically detailed in the Report and are subject to the scope, qualifications, assumptions and limitations set out in the Report or otherwise communicated to the Client.

Except as otherwise stated in the Report and to the extent that statements, opinions, facts, conclusion and / or recommendations in the Report (Conclusions) are based in whole or in part on information provided by the Client and other parties identified in the report (Information), those Conclusions are based on assumptions by WSP of the reliability, adequacy, accuracy and completeness of the Information and have not been verified. WSP accepts no responsibility for the Information.

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Appendix A

Consultation letters



06th February 2026

Dear Sir/Madam,

We are writing to notify that, Multiplex Constructions have been engaged as the Principal Contractor for the NEXTDC S4 Data Centre Project, located at 16 Johnston Crescent, Horsley Park NSW, 2175 as approved by the Department of Planning, Housing and Infrastructure (SSD-63741210).

Construction works are scheduled to commence on site within the coming weeks.

The approved development involves construction and operation of a data centre with a power consumption of 294 megawatts, electrical substations and switching station, diesel generators and diesel storage, car parking and ancillary office space, civil infrastructure works, and two 330kV transmissions lines with a length of 2.6 km and upgrade works at an existing substation.

During the construction phase, Multiplex will implement a range of noise mitigation and monitoring measures to minimise potential impacts. These measures will include the careful selection of plant and equipment, appropriate staging of works, and ongoing monitoring to ensure compliance with the project's conditions of approval.

We appreciate your cooperation and are committed to working with you to ensure the impacts are appropriately managed.

Further details are available on the Project website. <https://www.nextdc.com/s4-lot-305-conditions-of-consent>.

Yours sincerely,

Ivan Amaro

Stakeholder Engagement Manager
NEXTDCS4community@multiplex.global
M: +61 484 330 613

06th February 2026

To:

Landowners
321-325 Burley Road, Horsley Park

Dear Landowner,

We are writing to notify that, Multiplex Constructions have been engaged as the Principal Contractor for the NEXTDC S4 Data Centre Project, located at 16 Johnston Crescent, Horsley Park NSW, 2175 as approved by the Department of Planning, Housing and Infrastructure (SSD-63741210).

Construction works are scheduled to commence on site within the coming weeks.

The approved development involves construction and operation of a data centre with a power consumption of 294 megawatts, electrical substations and switching station, diesel generators and diesel storage, car parking and ancillary office space, civil infrastructure works, and two 330kV transmissions lines with a length of 2.6 km and upgrade works at an existing substation.

As an adjacent landowner, you are eligible to receive mitigation measures - such as landscaping or vegetation screening, installed on your property to minimise the visual impact of the development.

During the construction phase, Multiplex will implement a range of noise mitigation and monitoring measures to minimise potential impacts. These measures will include the careful selection of plant and equipment, appropriate staging of works, and ongoing monitoring to ensure compliance with the project's conditions of approval.

Should you wish to take up the offer of mitigation measures, or if you would like to discuss the available options further, please contact the undersigned at your convenience. We appreciate your cooperation and are committed to working with you to ensure the impacts are appropriately managed.

Further details are available on the Project website. <https://www.nextdc.com/s4-lot-305-conditions-of-consent>.

Yours sincerely,

Ivan Amaro

Stakeholder Engagement Manager
NEXTDCS4community@multiplex.global
M: +61 484 330 613

06th February 2026

To:

Landowners
285 Burley Road, Horsley Park

Dear Landowner,

We are writing to notify that, Multiplex Constructions have been engaged as the Principal Contractor for the NEXTDC S4 Data Centre Project, located at 16 Johnston Crescent, Horsley Park NSW, 2175 as approved by the Department of Planning, Housing and Infrastructure (SSD-63741210).

Construction works are scheduled to commence on site within the coming weeks.

The approved development involves construction and operation of a data centre with a power consumption of 294 megawatts, electrical substations and switching station, diesel generators and diesel storage, car parking and ancillary office space, civil infrastructure works, and two 330kV transmissions lines with a length of 2.6 km and upgrade works at an existing substation.

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Should you wish to take up the offer of mitigation measures, or if you would like to discuss the available options further, please contact the undersigned at your convenience. We appreciate your cooperation and are committed to working with you to ensure the impacts are appropriately managed.

Further details are available on the Project website. <https://www.nextdc.com/s4-lot-305-conditions-of-consent>.

Yours sincerely,

Ivan Amaro

Stakeholder Engagement Manager
NEXTDCS4community@multiplex.global
M: +61 484 330 613

14.5 Appendix 5: Stakeholder and Communications Management Plan

MULTIPLY

STAKEHOLDER AND COMMUNICATIONS MANAGEMENT PLAN

NEXTDC S4

Multiplex Constructions Pty Limited

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1. Introduction

1.1 Purpose

The purpose of this Stakeholder and Communications Plan is to outline the approach to stakeholder communication and consultation activities that Multiplex will undertake to ensure positive outcomes are achieved for the NEXTDC S4 project (the Project).

This plan is a sub-plan of the Project Management Plan, which forms part of Multiplex Management System which is certified to:

- » AS/NZS ISO 9001:2015 – Quality Management System
- » AS/NZS ISO 14001:2015 – Environmental Management System
- » AS/NZS ISO 45001:2018 – Occupational Health and Safety Management System
- » Federal Safety Commission Accreditation Scheme.

Copies of these certifications can be found on the Multiplex Operating System ‘Document and Forms Library’.

1.2 Scope of this Plan

This Plan applies to the works associated with the Project and consists of:

- » Strategies to manage communications when dealing with all stakeholders
- » Protocols to manage enquiries from the public, media, neighbourhood groups and other interested stakeholders
- » Methods to inform the local community, including the public, media, neighbourhood groups, local community and adjoining neighbours, of construction or other works
- » Defined roles and responsibilities for the Multiplex personnel involved in implementing this plan
- » A suite of consultation and communication strategies will be delivered by Multiplex to ensure the objectives are achieved.

1.3 Abbreviations

The abbreviations used in this Plan are outlined in the table below.

ABBREVIATION	DESCRIPTION
MOS	Multiplex Operating System
MSOP	Management System Operational Procedures
MPX	Multiplex

Figure 2 *Abbreviations*

1.4 Precedence

Where ambiguity is detected between the procedures and requirements in this plan and the MSOPs located on MOS, then the procedures nominated in this Plan will take precedence. Interface with other Project Plans and Procedures.

1.5 Interface with other Operational Procedures and Project Plans

This Plan should be read in conjunction with the MSOP and Management Plans detailed in Section 2.2 of this Plan. The MSOP referenced in this Plan are confidential documents, and as such, will not be issued outside of Multiplex. However, they will be made available, for the purpose of surveillance and audit.

1.6 Project Description

The NEXTDC S4 project is located at Lot 305, 16 Johnston Crescent, Horsley Park, NSW 2175. A State Significant Development Application has been prepared and submitted in support of this data center project. The project site has a total area of 8.206 hectares.

The project consists of two data center buildings comprising a total gross floor area (GFA) of 61,695m² including 56,464m² of technical data hall floor space and 5,231m² of ancillary office floor space, including 'front of house's meeting and administrative spaces.

Ancillary developments on site include a centralized security office building at the main vehicle entrance, on-site parking for 200 cars, identification signage, civil and stormwater works and 12,769m² of deep soil landscaping.

The project consists of a high-voltage (HV) power connection delivering 294 megawatts of power, including a 330kV substation and 33kV switching station, plus above ground diesel storage tanks and above ground water tanks for industrial water and fire water.

The NEXTDC S4 project can be summarised as follows:

- Building C, HV switching building, 330kV substation, entrance to site, centralised security office (SOC), HVSB, water tanks, fire tanks, pump rooms and the site infrastructure works.
- Building D
- Building A
- Building B



Figure 1 *Figure 1*

NEXTDC S4 Project Render

1.7 Document Control

This Plan will be monitored, and necessary changes will be identified in the table over the page and communicated to all relevant personnel. Amendments and updates to this Plan will be made if the strategies and actions described in the plan no longer meet desired outcomes, or if improvements to existing measures can be made.

Electronic distribution of this Plan will be made to those detailed on the distribution listing on Aconex.

Revision	Date	Description	Page	Reviewed By	Approved By
1	21/11/2025	Initial Issue	All	Thomas Cox	Samarth Yadav
2	14/01/2026	Issue	8-12, 14-16	Ivan Amaro	Samarth Yadav

Figure 3 *Revision Table*

2. Communication and Stakeholder Management Approach and Framework

2.1 Approach to Communication and Stakeholder Management

Multiplex is committed to effective community consultation and stakeholder engagement as a means of building better relationships with the communities in which we operate, ultimately resulting in improved business planning and performance. Our legacy is more than buildings and we will work within the Projects local community to deliver our suite of Social Impact programs and collaborate with the Client where feasible to deliver their community initiatives.

We believe open collaboration and dialogue helps identify issues of mutual concern and opportunities for innovation, provides access to new skills and experience, aligns divergent expectations, streamlines decision-making time and cost, and promotes greater ownership, support, and legitimacy for project outcomes.

Our stakeholder relationships are guided by best practice principles which ensure consultation is:

- » Timely – so participants have time to express their views and have a real opportunity to influence outcomes.
- » Inclusive – involving representation from a broad and truly representative cross-section of interests, including minority and disadvantaged groups.
- » Community focused – aimed at determining what is best for the whole community, rather than individuals.
- » Interactive and deliberative – encouraging full and frank discussion.
- » Effective – so participants are informed and understand the impact of their involvement even though they may not reach consensus
- » Significant – so participants are confident of the likelihood their recommendations will be adopted, or they will be provided with a public explanation.
- » Well facilitated – to ensure credibility, independence, and equitable participation in the process
- » Open, fair, and subject to evaluation – a formula for measuring the success of each consultation will be determined in advance and feedback provided to stakeholders.
- » Flexible and cost-effective – involving a range of communication and consultation mechanisms appropriate to each issue and each stakeholder group.

2.2 Management System Framework

Multiplex has a management framework which is applied throughout the business and on all projects it undertakes. The communication and stakeholder documentation forms part of this System Framework and maintained in electronic format on MOS.

The structure of the overall Management System is explained below.

Element	Content
Internal Control Framework	<ul style="list-style-type: none"> » Operating Environment » Risk Assessment » Control Activities » Information and Communication » Monitoring Activities
Policies	<ul style="list-style-type: none"> » Work Health and Safety » Environmental » Quality » Risk » Drugs and Alcohol » Injury and Rehabilitation » Indigenous Engagement » Diversity

Element	Content
Operational Procedures	<ul style="list-style-type: none"> » Risk Management » Integrated Management » Quality Management » Design Management » Construction Management » Health and Safety Management » Environmental Management » Project Administration » Bid Management » Human Resources Management » Planning and Programming
Management Plans	<ul style="list-style-type: none"> » Project » Design » Work Health and Safety » Construction » Commissioning and Testing » Stakeholder and Communications » Environmental » Risk » Traffic » Drug and Alcohol » Quality » Construction Noise & Vibration » Covid-19 » BIM » Zinc Whiskers » Sustainability » Clean Build » Document
Risk Management	<ul style="list-style-type: none"> » Project Risks » Trade/Element Risks
Forms and Guides	<ul style="list-style-type: none"> » As per MOS Document and Forms Library

Figure 4 Management Framework

3. Stakeholder and Communication Objectives

Project stakeholder and communication objectives and targets established in the table below will be monitored, reviewed, and assessed by Senior Management, in accordance with Procedure BU AUS IMS P DIV 030 – Planning and Performance Measurement.

Objective	Target	Method
Positively position the project	<ul style="list-style-type: none"> » Generate positive positioning of the project within the community. » Gain acceptance by key stakeholder groups. 	<ul style="list-style-type: none"> » Construction updates » Stakeholder briefings » Positive media events
Ensure the community is well informed before and during the construction of the project	<ul style="list-style-type: none"> » Provide regular, accurate and timely information about activities that may affect the community. 	<ul style="list-style-type: none"> » Construction updates and advertisements » Community information session/s » Notifications » Signage » Letters
Ensure that government and other key stakeholders, including emergency services are kept informed	<ul style="list-style-type: none"> » Develop an effective communication link with emergency services » Develop a close relationship with key government agencies 	<ul style="list-style-type: none"> » Targeted stakeholder meetings
Build and sustain community/ stakeholder understanding and acceptance of the design and construction process	<ul style="list-style-type: none"> » Provide access to regular, timely and clear information about design and construction (issues, timetables, etc). » Listen and respond to any issues raised by the community including all reasonable requests. » Explain technical terms in a plain English manner. 	<ul style="list-style-type: none"> » Construction updates and advertisements » Notifications » Targeted community meetings
Early identification of issues and impacts and implementation of controls to minimise disruption and reduce complaints	<ul style="list-style-type: none"> » Identify issues and ensure relevant stakeholders are informed in advance about planned works and potential impacts. » Listen to and ensure all enquiries and complaints are responded to and thoroughly investigated in a timely manner. 	<ul style="list-style-type: none"> » Community information session/s » Targeted small group meetings
Effectively manage any issues which emerge during the life of the project	<ul style="list-style-type: none"> » Respond to all complaints within the specified timeframes. » Thoroughly investigate and close out complaints. » Maintain a register of all complaints and enquiries. 	<ul style="list-style-type: none"> » Complaints handling » Complaints register
Keep all alliance participants updated on project progress	<ul style="list-style-type: none"> » Provide regular, timely and accurate project updates on community issues to the team » Meet regularly with project team 	<ul style="list-style-type: none"> » Meetings

Figure 5 *Project Objectives and targets*

4. Responsibility and Accountability

4.1 Multiplex Roles and Responsibilities

Multiplex has identified appropriate levels of resources, individual responsibility, and accountability for managing quality across all roles within the Project Team. These are contained in Procedure BU AUS IMS P DIV 010 – *Responsibility and Accountability*.

The general responsibilities and accountabilities of key project personnel in relation to communication and stakeholder management are outlined in the below.

4.1.1 Community and Stakeholder Manager

The Community and Stakeholder Manager is responsible for

- » Establishing and maintaining relationships with immediate and adjacent neighbours
- » Managing receipt of responses to and recording of stakeholder enquiries and complaints, and the associated maintenance of stakeholder records
- » Assisting with the investigation and resolution of complaints
- » Managing the production of communication materials such as advertisements, notifications, display material.
- » Ensuring that all relevant parties, immediate and adjacent neighbours, and broader neighbourhood members are kept informed of emerging issues and the management strategies in place to deal with them, as well as key design and construction milestones
- » Referring design enquiries to the appropriate person and ensure that the enquiries are responded to in a timely fashion.
- » Coordinating all community involvement activities
- » Attending community meetings or other activities as arranged or requested by the client.

4.1.2 Project Manager

The Project Manager is responsible for:

- » Implementing the plan and associated procedures during all phases of the Project.
- » Ensuring Community and Stakeholder Manager and other members of Multiplex's management team have adequate resources to implement the plan during the Project.
- » Approving all communications materials prior to issuing to the Client and seeking approval from the Regional Managing Director to respond to media enquiries.

4.1.3 Site Manager

The Site Manager is responsible for:

- » Working closely with the Project Manager to ensure all site staff members are aware of the project's goals and objectives, and the connection of their role to those goals and objectives.
- » Regularly communicating with the Community and Stakeholder Manager to ensure timely implementation of the plan
- » Assisting in undertaking informal communications with immediate neighbours in consultation with the Community and Stakeholder Manager, to keep them informed of 'day to day' construction activities.

5. Risk Management

5.1 Risk Workshops

Multiplex will undertake risk workshops in accordance with the table below to identify all significant risks relating to design and quality and develop control strategies relating to the project. Further detail relating to risk management is detailed in Procedure BU AUS IMS P DIV 020 – *Risk and Opportunity Management* and the design and risk management plans developed for the project.

Type of Risk Programme	Purpose	Frequency	Participants	Record
Project Risk Workshops	Overarching risk workshop conducted to identify all significant risks/opportunities and develop control strategies relating to the project	As per schedule	Project Team	Project Risk Register
Safety Risk Workshops	To identify key health and safety risks and develop control strategies for all works associated with the project	As per schedule	Project Team, Safety Group, Subcontractors	Project Risk Register, Meeting Minutes, Risk Assessments
Quality Risk Workshops	To identify key design risks and develop control strategies for all works associated with the project	As per schedule	Project Team, Quality Team, Subcontractors, Consultants and Suppliers	Project Risk Register
Environmental Risk Workshops	To identify key EMS aspects, impacts and develop control strategies for all works associated with the project	As per schedule	Project Team, WHS&E Manager / Coordinator	Project Risk Register

Figure 6 Risk Workshops

5.2 Preliminary Risk Assessment

The project team, and in particular the Community and Stakeholder Manager, will collaborate closely with stakeholders and the community in an initiative-taking, transparent, open, and timely way to understand individual needs and concerns.

A preliminary analysis of the stakeholder and community issues and strategies identified has been outlined in the table below.

Stakeholder	Issue	Strategy	Communication
Adjacent residential property owners.	Construction nuisance (dust, noise, vibration, traffic)	<ul style="list-style-type: none"> » Traffic management plan » Careful sequencing » Ongoing liaison Out of hours works 	<ul style="list-style-type: none"> » Disruption shutdown notifications issued » Roadside signs and displays; signposting of changes; » Modification of road entry/ access routes in co-ordination with TfNSW » Liaising with TfNSW, including Letterbox/email notification and liaising with vocal residents/businesses/services leading up to out of hours work. » Project web portal, hotline and email access
Road users	Time delays and safety risk during construction	Traffic management plan	Newsletters; standard advertising; roadside signs and displays

Stakeholder	Issue	Strategy	Communication
Pedestrians	Closure of access	Careful sequencing	Early communication, signposting of changes
Businesses	Disruption to business operations	Ongoing liaison with affected businesses.	<ul style="list-style-type: none"> » Identify and consult with affected businesses early about schedule and detail of works » Letterbox/email notification and liaising with vocal residents/businesses/services leading up to out of hours work. » Project web portal, hotline and email access
Pedestrians and cyclist	Lack of warning and consideration of needs	Careful sequencing	Clear signposting, consideration in plans and construction methods.
Residents / businesses	Lack of warning and consideration of needs	Careful planning	<ul style="list-style-type: none"> » Letterbox/email notification and liaising with vocal residents/businesses/services leading up to out of hours work. » Project web portal, hotline and email access

Figure 7 Preliminary Risk Assessment

6. Stakeholders and Key Messages

6.1 Stakeholder Groups

There are numerous stakeholders with an interest in the Project. Broadly, they are categorised into six groups, which include, but are not limited to the following individuals and organisations.

Group	Stakeholders
Client	NEXTDC
Institutional - Federal, State and Local Government	Government Agencies Department of Planning and Infrastructure Department of the Environment and Conservation Environmental Protection Authority Department of Indigenous Affairs Heritage Council State Transit Local Government Authorities Emergency Service Authorities
Community and Project Neighbours	Residents Local road users – motorists, cyclists, and pedestrians Local aged care facilities Local schools
Regional Industry/Community Interest Groups	Regional road users – motorists and cyclists Indigenous community representatives Community environmental groups
Project Team	MPX management Project employees Contractors, consultants, suppliers
Media	Radio and Television Industry media (construction and transport) State media Local newspapers

Figure 8 Stakeholder Groups

An outline of the stakeholders with an interest in construction and site related matters throughout the stages of the delivery of the project is included in Appendix 1. This stakeholder list will be regularly reviewed and updated as required.

6.2 Key Messages

A number of key messages relating to the project will be consistently incorporated throughout the campaign in all printed materials and comments made by Multiplex and its representatives to stakeholders. These messages should outline the reasons for and associated benefits of the project. The messages will be continuously evaluated, and if necessary, expanded on and/or fine-tuned to address changing community perceptions and concerns.

Suggested messages include:

- » Construction is expected to start in Q1 2026 and should be completed by Q2 2028
- » A traffic management plan will be in place throughout the works to maintain traffic flow.
- » A Multiplex Stakeholder Community Relations Representative will be available to provide information and receive feedback throughout the project.

6.3 Key Milestones

During the project, there are several key milestones that may be of interest to stakeholders and media outlets which will be provided to the client. These include but are not limited to:

- » Significant concrete pours. eg, the first concrete pour
- » Practical completion of significant buildings
- » Practical completion of works
- » Project completion
- » An event that reflects innovation or ingenuity
- » The completion of a section of the construction works.
- » Any event that may be of public interest
- » Delivery of significant items/installations.

7. Enquiries, Feedback and Response Management

7.1 Complaints

A key part of this plan and the stakeholder communication process is the method for prompt and accurate complaints resolution. Multiplex will lead all complaints management, including responding to and closing out complaints.

To reduce the likelihood of complaints, Multiplex will proactively review the risk and frequency of impact on the external stakeholders from construction activities. The aim of this is to:

- » Identify stakeholders who may experience impacts.
- » Identify the potential impacts and the degree of those impacts.
- » Identify the need to communicate activity to stakeholders.
- » Identify effective methods of communication to these impacted stakeholders.
- » Identify when a construction issue requires dissemination to a wider audience.
- » Develop information for broader dissemination via website, public notices, letter drops, email distribution, etc.

If complaints are received, the complaints managing protocol will be as follows:

- » All complaints received by Multiplex will be managed by the Community and Stakeholder Manager in consultation with the Site Manager and Project Manager
- » All complaints will be recorded and resolved where appropriate by the Community and Stakeholder Manager
- » A register will be maintained outlining the source and nature of the complaint and corrective action will be reported and documented.
- » The complaint will be investigated promptly to determine the cause and corrective action that will be required to be planned and implemented.
- » Complainants will be acknowledged by telephone or email within one (1) working day
- » Complainants will be informed of the corrective action that has been taken to mitigate or otherwise resolve the adverse effects.

The approach to resolving complaints will include:

- » Confirming the nature of the complaint and the requested action
- » If the response requires alternative resolution, the Community and Stakeholder Manager will contact appropriate project staff for input and discussion of options for resolution. If a major issue, the matter will be escalated within Multiplex, and the client will be informed and involved as appropriate.
- » The resolution approach is to be mutually acceptable where possible to the complainant, Multiplex and the client as required. Resolution would be actively sought to ensure the project continues to move forward.
- » A complaints register will be developed, maintained, and reported as part of the project reporting requirements.

7.2 Enquiries and Information

All enquiries will in the first instance be directed to the Community and Stakeholder Manager who will determine the most appropriate source of relevant information in conjunction with the Project Manager.

A log will be kept to record, monitor and report on all enquiries and associated responses.

7.3 Media and Stakeholder Inquiries

All media and stakeholder inquiries received by Multiplex are directed to the Community and Stakeholder Manager for consultation/resolution, which may include the preparation and dissemination of a media statement or a public

document via the Multiplex marketing and communications team. Project Construction Information/Logistics Alerts and Complaints

All project construction information/coordination alerts deemed relevant for dissemination to stakeholders will be directed by Multiplex to the Client for distribution to the relevant internal and external stakeholders.

7.4 Incidents and Emergencies

Incidents and emergencies shall be reported in accordance with the procedures outlined in the Emergency Management Plan, Health & Safety Management Plan and Environmental Management Plan.

7.5 Issues Management

During the design and construction phase of the project, various stakeholder issues and concerns may arise that require immediate attention and action. Multiplex will be responsive and strive, wherever possible, to resolve issues to the satisfaction of stakeholders.

Multiplex appreciates that being open and honest, listening to stakeholder concerns, accepting alternative opinions or viewpoints, and ensuring that stakeholders understand the design and construction methods and timelines are vital priorities for the community relations effort. Allowing individuals or organisations to express their concerns and openly addressing issues usually provides the most favourable method for resolution of potential conflicts.

Multiplex will provide a structured approach to problem solving, based on the following key steps:

- » Preparing a definition or explanation of the problem and/or issue
- » Setting out objectives for its solution
- » Identifying the range of potential solutions
- » Outlining the extent of the problem and/or issue
- » Studying any other issues that may be associated with the problem and/or issue.
- » Ascertaining the need for stakeholder or community participation
- » Implementing the plan
- » Planning the resolution of the problem and/or issue
- » Implementing the solution and monitoring its progress.

Furthermore, Multiplex will be initiative-taking in planning for issues of public concern. These issues can include dust, odour and air quality, noise and vibration and traffic management. Extensive mitigation strategies for these issues will be developed and included in the Environmental Management Plan and the Site Operations Management Plan. Other issues such as safety incidents on site could also be of public concern and the mitigation strategies for safety incidents are included in the Safety Management Plan and Emergency Management Plan.

Attendance at regular meetings and careful and considered planning with key project management staff, including the Project Director and other senior management, will assist the Community and Stakeholder Manager to ensure that stakeholders are notified of any matters by using the most appropriate communication tool.

7.6 Public Comment and Media Management

Multiplex will advise its subcontractors and consultant teams in writing of the requirement to adhere to the following contractual obligations:

- » To seek approval from Multiplex Community and Stakeholder Manager (who will seek approval from Multiplex Communications Manager and iCBR as per protocol) in relation to media and promotional opportunities.
- » To not make any public comment, issue any information, presentation, document, or article in respect of the project (including comment to or provision of information to any media) without the prior approval from the Multiplex Community and Stakeholder Manager.

8. Communication Strategies

Multiplex will deliver a suite of consultation and communication strategies to ensure the objectives are achieved.

The consultation and communication tools and activities outlined below and contained in section 4.2 of this plan have been identified as appropriate means of communication to the community.

The Community and Stakeholder Manager will review the communications tools on a regular basis to ensure that the most appropriate tool is being used for the relevant stakeholders.

All the tools and materials will include appropriate contact details to ensure open lines of communication.

8.1 Communication Enquiries or Protocols

It is important to establish a management chain for all project communications, to and from stakeholders including community members, to ensure consistency and efficiency in responding to complaints or enquiries or for managing media enquiries about the project's activities.

The 24hr toll free Project telephone service (**TBC**) and general email address (**TBC**) provided for the community to make enquiries, report incidents and register complaints.

8.2 Internal and External Newsletters/Project Updates

Multiplex may create internal newsletters to inform the project team of construction progress.

8.3 Letterbox and Email

Where a particular activity is planned that may have some effect on adjoining owners or buildings, advice will be provided to them via a letterbox or email notification five days prior unless the work is of an urgent nature with safety implications. The notices will include the following details:

- » The nature of the work
- » The reason it is being undertaken.
- » The expected duration
- » Changes to traffic arrangements and property access
- » The 24-hour contact number of the responsible representative.

8.4 Face to Face Meetings

Multiplex will provide briefings to the adjacent neighbours to develop and maintain positive ongoing relationships and to provide timely information on design or construction activities where necessary.

8.5 Media Spokesperson

The MPX Chief Executive Officer (CEO) is the only spokesperson authorised to speak to and be quoted by the media on issues that impact our business, including our projects, regions, or industry commentary.

Any activity undertaken by Multiplex must be considered in context with potential impacts it may have on the broader business.

On a case-by-case basis, the CEO will delegate the interview or public speaking opportunity to the appropriate Managing Director or Regional Managing Director or spokesperson.

8.6 Media Communication and Releases

The Multiplex marketing and communication team is responsible for managing the preparation and distribution of all media materials including media releases, fact sheets, background documents, written quotes, articles for the media and letters to the editor. Relevant input and advice from legal and the appropriate Regional Managing Director or Managing Director will be obtained.

External approvals for joint releases by clients/contractors or other outside parties along with seeking client approval on all media and communication will be managed by the marketing and communication team via the Community and Stakeholder Manager

All media releases require final approval from John Flecker, CEO Multiplex Australasia.

8.7 Social media

On behalf of the contractor, social media surrounding the project will be managed by Multiplex's Marketing and Communication Representative with approval from the Client.

Any images or content generated on the project will be promoted via Multiplex's generic LinkedIn and Instagram accounts with approval from the Client.

8.8 Media Enquiries

In the event that a staff member is approached by a journalist and asked for information or invited to make comment on an issue, refer the journalist immediately to iCBR nominated media representative and Multiplex's Communication Manager:

Primary Contact:

Sophie Manning
Communications Advisor

T +61 455 233 356, E Sophie.manning@multiplex.global

Secondary Contact:

Natalie Goodrick
Head of Communications

T +61 2 9322 2161, M +61 417 683 025, E natalie.goodrick@multiplex.global

The staff member should not make comment (either on or off the record) or provide any information to the journalist.

Journalists, photographers, film crews or other media representatives are not permitted to interview or photograph/film staff, or the site or the building interior without prior approval from the Communications Manager and unless accompanied by an authorised escort.

8.9 Site Tours

Multiplex will accommodate all reasonable requests from the client for site visits that are within safe working practices.

When arranging site visits, the following rules apply:

- » All site visits are coordinated via the MPX Project Manager and/or Community and Stakeholder Manager
- » Visitors will need to be appropriately dressed (e.g. long trousers, shirt, steel-capped safety boots, no soft-soled shoes, no high heels, no running, or sports shoes). Visitors will be required to attend a visitor's induction briefing and will be provided with personal protective equipment (high visibility vest and hard hat except for safety boots)
- » For safety reasons the size of the groups visiting the site may be limited by Multiplex.

8.10 Signage/branding

Multiplex will install a project sign and branding material at strategic location/s eg, site entrance, to inform local stakeholders of the relevant project details and points of contact.

8.11 Photography

Project photography is scheduled as follows:

- » Regular photographs of construction progress (also for inclusion in the-monthly report). These photographs are taken by both a professional photographer and by site staff to ensure a comprehensive photographic record of the project
- » Key construction milestones
- » A photographic record of special construction events/visits.

All project photography is to be made available to the client on request with permission for use.

8.12 Promotional Events

Multiplex will work with the Client to identify any promotional opportunities and assist as appropriate with respect to the staging of the event/milestone. This includes the provision of reasonable access to the site for key personnel.

9. Reporting, Monitoring and Evaluation

9.1 Reporting

As part of the monthly report to the client, Multiplex will provide a summary of all issues and communications with the public, media, neighbourhood groups, key users and adjoining neighbours, including a description of any strategies.

Multiplex will submit a report to the client at the end of each month detailing the community liaison activities performed during the month and the activities proposed for the following month. These monthly reports will include:

- » A summary of customer feedback from all sources
- » A summary of all complaints and enquiries received during the month, the means by which they were addressed/responded to and whether resolution of the complaint was achieved
- » Details of complaints and enquiries from previous months that were not previously responded to or not resolved.
- » Status of responses to all representations including receipt and response to issues.

9.2 Monitoring and Evaluation

The Community and Stakeholder Manager will monitor the performance and effectiveness of the communication activities on a regular basis. The Community and Stakeholder Manager or nominated delegate will modify processes and communication channels in light of any feedback or issues identified in the monitoring process. Activities to be monitored include responsiveness and effectiveness of communication with the community and stakeholders as well as information flow.

Evaluation of the performance and effectiveness of the Plan will be undertaken on a six-monthly basis. Key elements of the evaluation will include examining the adequacy of the Plan and its implementation as evidenced by the:

- » Availability, quality, and distribution of information about the project to the local community and stakeholders
- » Currency and accuracy of the Enquiries and Complaints Management System
- » Nature of issues/complaints raised, and level of responsiveness and appropriateness of action taken by MPX.
- » Response times.

14.6 Appendix 6: Unexpected Contamination Finds Protocol



MULTIPLEX

UNEXPECTED CONTAMINATION FINDS PROTOCOL

NEXTDC S4

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1. Introduction

1.1 Purpose

This Unexpected Contamination Finds Procedure details the actions to be taken when potential contaminated soil and/or material is encountered during Work. If contaminated materials are discovered, this procedure will be implemented across the S4 Project and across all work.

This Procedure has been developed in accordance with the NSW Environment Protection Authority (EPA) contamination management guidelines.

Unexpected contamination is considered any elevated level of a contaminant, not previously identified within a Contamination Report (including Preliminary Site Investigation Reports and Detailed Site Investigation Reports), including asbestos containing material (ACM).

1.2 Scope

This Plan applies to all Workers on all nominated Multiplex workplaces in NSW and ACT and compliance with the requirements of this Plan is a condition of entry to a Multiplex workplace.

1.3 Interface with other Operational Procedures and Project Plans

This Plan should be read in conjunction with the Management System Operational Procedures, Work Health and Safety Handbook and Management Plans developed for the workplace.

1.4 Document Control

Amendments and updates to this Plan will be made if the strategies and actions described in the Plan no longer meet desired outcomes, or if improvements to existing measures can be made.

This Plan will be monitored, and necessary changes will be identified in the table over the page and communicated to all relevant personnel.

REV	DATE	DESCRIPTION	PAGE	REVIEWED BY	APPROVED BY
1	1/12/2025	Revision 1	All	Thomas Cox	Samarth Yadav

Table 1 *Revision Table*

1.5 Abbreviations

The abbreviations used in this Plan are outlined in the table below.

ABBREVIATION	DESCRIPTION
ACM	Asbestos Containing Material
ARCP	Asbestos Removal Control Plan
CEMP	Construction Environmental Management Plan
CLM Act 1997	NSW Contaminated Land Management Act 1997
CoA	Condition of Approval
DPE	NSW Department of Planning and Environment
EMS	Environmental Management System
EPA	NSW Environmental Protection Authority
EWMS	Environmental Work Method Statement
PM	Project Manager
PPE	Personal Protective Equipment
Project	NEXTDC S4
POEO Act 1997	NSW Protection of the Environment Operations Act 1997
RAP	Remediation Action Plan
SWMS	Safe Work Method Statement
UFP	Unexpected Finds Procedure

Table 2 *Abbreviations Table*

1.6 Definitions

All site personnel (including sub-contractors) are to be included and/or toolboxed on the identification of potential contaminated soil/material along with the requirements of this Procedure. Site personnel should be informed of the potential sources of contamination within the project and indications of contamination in soil and groundwater.

1.7 Roles and Responsibilities

The Contractor Environmental Manager (or Delegate) will be notified in the event of an unexpected find on site during the works. The Contractor Environmental Manager is the key contact point for the project Environmental and Sustainability Officer (ESO) regarding this Procedure. The Contractor Environmental Manager will ensure that this Procedure is effectively implemented, and all site personnel are aware of the procedure requirements. For minimal impact works, where a resolute Contractor Environmental Manager may not be engaged, the ESO will be responsible for fulfilling the role of the Contractor Environmental Manager as described within its document.

The Construction Contractor's Environmental Manager will be responsible for ensuring that if contaminated material is discovered, site personnel are informed immediately and all work in the vicinity of the find ceases.

The Construction Contractor's Supervisor will be advised of any required actions for the control of discovered contamination on site, such as implementation of exclusion zones and signage, and will be responsible for ensuring the actions are undertaken.

The Site Auditor will review this procedure and provide certification that the procedure is appropriate via an interim audit advice or a Section B Site Audit Statement. The Site Auditor will also provide advice on an unexpected contamination find and review relevant documentation e.g. Remediation Action Plan (RAP). This will include providing written evidence on the contamination risk and the appropriateness of the documentation and any proposed management measures as required.

Contaminated land consultant (including Occupational Hygienist where required) will conduct assessments and investigations on potential contaminated material and provide advice and direction on the remediation works and validate once remediation works have been completed.

All site personnel are responsible for reporting any unexpected contamination finds for the duration of the Project.

1.8 Review

This procedure will be reviewed on a task specific activity and every 6 months or as required following an incident, event or audit.

2. Procedure

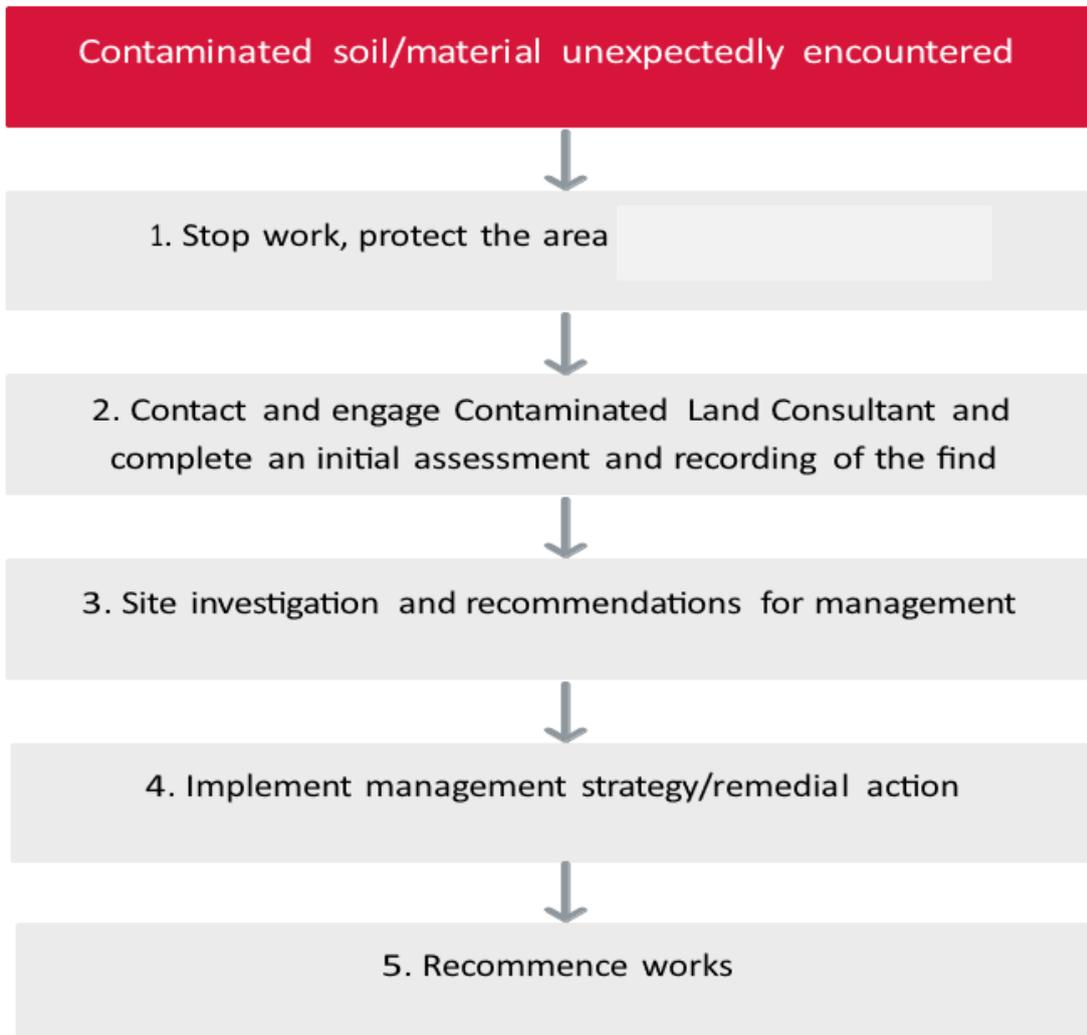


Figure 1 Overview of steps to be undertaken if contaminated material is encountered.

Step 1. Stop work, protect the area and inform Client & Hygienist.

- Cease work in the immediate/affected area
- The Project Manager or Site Supervisor will immediately notify the Safety Team and Senior leadership team.
- Construction Contractor Environmental Manager will inform the Site Auditor of the potential unexpected finds
- Delineate the area of potential contamination to prevent access by other workers and public, including maintaining a safe distance from the contaminated area. The Contractor Project Manager or Site Supervisor will be responsible for delineation of an exclusion zone around the affected area using fencing and/or appropriate barriers and signage. The location of the 'no go zone' and any other necessary controls, will be confirmed with the Contaminated Land Consultant.
- When safe to access the area, install environmental controls around the site to contain the contaminated material, which may include diversion of water to minimise potential spread via surface water runoff and/or covering the area.
- If the unexpected find is asbestos refer to Appendix A for additional measures to be implemented. If there are other signs of contamination continue to Step 2.

Step 2. Contact and engage Contaminated Land Consultant and complete initial assessment and recording of the find.

- Construction Contractor Environmental Manager will engage a suitably qualified and experienced Contaminated Land Consultant to identify the potential contaminant in the unexpected find and its potential impact to human health or environment.
- Site access will be arranged for the Contaminated Land Consultant to inspect the finding as soon as practical.
- The following details will be recorded upon the unexpected contamination finds:
 - Location of the potential contamination
 - Visual appearance
 - Odour (if any)
 - Depth
 - Surrounding materials and works being undertaken at the time of discovering the material
- If contamination investigation, management or remediation activities are required a SWMS and EWMS will be developed.
- Should the Contaminated Land Consultant provide advice after the site inspection and initial assessment that no contamination constraint exists, such advice should be provided in writing and confirmed by the Project Manager or Site Supervisor. The Project Manager will seek written clearance to resume project.

Step 3. Site Investigation and recommendations for management

- If further site investigation is required, the Contaminated Land Consultant will assess the situation and advise of the approach to be taken in consultation with the Site Auditor. The Site Auditor would independently review advice from the Lead Environmental Consultant to confirm its appropriateness prior to implementation.
- The Contaminated Land Consultant will provide recommendations on the appropriate management measures to be implemented. This may include leaving contamination undisturbed, capping of contamination, treatment, or off-site disposal. Material to be disposed of off-site will be transferred to an appropriately licensed waste facility.
- Where asbestos only has been found the licensed asbestos removalist will prepare an Asbestos Removal Control Plan prior to the removal of any asbestos and asbestos containing material in accordance with Appendix A. The Site Auditor will review the Asbestos Removal Control Plan

Step 4. Implement management strategy.

- Implement agreed management strategy.
- Relevant EWMS or SWMS will be reviewed and updated when required.
- The Construction Contractor will provide appropriate validation to demonstrate removal of ACM.
- The CEMP will be reviewed and will be updated as appropriate with any changes resulting from the find. The updated CEMP will incorporate additional conditions arising from any further approvals, such as Planning Approval Modifications, and consultation if relevant. If an update to the CEMP is required, approval will be sought from the ER and DPE, in consultation with relevant government agencies, as appropriate.
- Any changes to the CEMP will be included in site induction material. Site workers will be updated during toolbox talks.

Step 5. Recommence works.

- Obtain concurrence from the Site Auditor in the form of an Auditor's Interim Advice, that the UFP has been appropriately addressed.

3. Records

The Construction Contractors will maintain a register of any unexpected contamination finds, including a map of all contaminated and/or remediated sites. The register and disposal records will be made available to the client and Site Auditor on request.

Appendix A: Additional measures for unexpected asbestos

Removal Technique	DESCRIPTION
Hand Picking	<ul style="list-style-type: none"> • Suitable for bonded asbestos containing material in near surface only (i.e. 10cm) • Raking may enhance removal, although only in sandy soils • Not applicable for friable asbestos • Less effective in areas of dense vegetation
Tiling	<ul style="list-style-type: none"> • Mechanical tiling to turn over soil following hand picking. • Suitable for bonded ACM soils to approx. 30 cm in sandy soils • Not applicable for friable asbestos • Less effective in areas if dense soils or clayey soils.
Mechanical screening	<ul style="list-style-type: none"> • Suitable for large volumes of soil impacted bonded asbestos containing material. • Susceptible to generate fibres requiring effective dust/fibre control. • Not applicable for friable asbestos
Mechanical excavation	<ul style="list-style-type: none"> • Physical excavation of soil containing material where impact extends beneath surface soils. • Generates larger volume of soil that requires further management (i.e. off-site disposal, screening, spreading, and handpicking/tiling)

The Contractor's Environmental Manager will attend and monitor any asbestos / ACM removal works or remediation measures undertaken for treatment of asbestos / ACM on site. The Construction Contractor will provide appropriate validation to demonstrate removal of ACM using the above techniques has been successful.

Removal of asbestos/asbestos containing material

A licensed asbestos removalist will be required for removal works where there is friable asbestos, or the contaminated area is greater than 10 m². There are two types of asbestos removal licences: Class A and Class B. The type of licence required depends on the type and quantity of asbestos or asbestos containing material to be removed, as outlined in Table below.

Licence Type	What asbestos can be removed
Class A	<p>Can remove any amount or quantity or quality of asbestos or asbestos containing material, including:</p> <ul style="list-style-type: none"> • any amount of friable asbestos or asbestos containing material. • any amount of asbestos-contaminated dust or debris • any amount of non-friable asbestos or asbestos containing material
Class B	<p>Can remove:</p> <ul style="list-style-type: none"> • any amount of non-friable asbestos or asbestos containing material. <p>Note: A Class B licence is required for removal of more than 10m² of non-friable asbestos or asbestos containing material, but the licence holder can also remove up to 10m² of non-friable asbestos or asbestos containing material.</p> <ul style="list-style-type: none"> • asbestos-contaminated dust or debris associated with the removal of non-friable asbestos or asbestos containing material. <p>Note: A Class B licence is required for removal of asbestos-contaminated dust or debris associated with the removal of than 10m² of non-friable asbestos or asbestos containing-material, but the licence holder can also remove asbestos-contaminated dust or debris associated with the removal of up to 10m² of non-friable asbestos or asbestos containing material.</p>
No licence required	<p>Can remove:</p>

- up to 10m² of non-friable asbestos or asbestos containing material.
- asbestos-contaminated dust or debris that is:
- associated with the removal of less than 10m² of non-friable asbestos or asbestos containing material.
- not associated with the removal of friable or non-friable asbestos and is only a minor contamination.

The licensed asbestos removalist will prepare an Asbestos Removal Control Plan prior to the removal of any asbestos and asbestos containing material. The Asbestos Removal Control Plan documents the specific control measures to be implemented to ensure site personnel and others are not at risk when asbestos removal work is being conducted. It includes how the asbestos removal will be conducted, including the method, tools, equipment and PPE to be used and the asbestos and asbestos containing material to be removed, including the location, type and condition of the asbestos and asbestos containing material.

Project Manager will be informed prior to excavation or removal of asbestos or asbestos containing material. If the removal activity is to occur in the vicinity of any occupied residence or business, the Contractor's Community Liaison Officer will notify the affected resident/s or business owner/s.

14.7 Appendix 7: Aboriginal Heritage Management Procedures

Aboriginal Heritage Management Procedures

*S4 Data Centre
Johnston Crescent
Horsley Park, NSW*

Urbis staff responsible for this report were:

Director	Balazs Hansel, MA Archaeology, MA History, M. ICOMOS
Associate Director	Aaron Olsen, MA (Archaeology), Dip. Arts (Archaeology), BSc (Hons), MIP, PhD
Senior Consultant	Owen Barrett, BA Archaeology and Paleoanthropology, Dip. Indigenous Archaeology
Project Code	P0033048
Report Number	Draft issued 16 January 2026 Final issued 19 January 2026

Acknowledgment of Country

Urbis acknowledges the Traditional Custodians of the lands we operate on. We recognise that First Nations sovereignty was never ceded and respect First Nations peoples continuing connection to these lands, waterways and ecosystems for over 60,000 years. We pay our respects to First Nations Elders, past and present.

Urbis is committed to incorporating our respect for First Nations cultures, peoples and storytelling in our work across the Country. We are proud to have partnered with Darug Nation artist, **Hayley Pigram**, and to profile her artwork – **Sacred River Dreaming**.



The river is the symbol of the Dreaming and the journey of life. The circles and lines represent people meeting and connections across time and space. When we are working in different places, we can still be connected and work towards the same goal.

All information supplied to Urbis in order to conduct this research has been treated in the strictest confidence. It shall only be used in this context and shall not be made available to third parties without client authorisation. Confidential information has been stored securely and data provided by respondents, as well as their identity, has been treated in the strictest confidence and all assurance given to respondents have been and shall be fulfilled.

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Executive Summary

The present Aboriginal Heritage Management Procedures (**the AHMP**) have been prepared by Urbis on behalf of the NEXTDC Limited (**the Proponent**) for the proposed redevelopment of 16 Johnston Crescent, Horsley Park, NSW, legally defined as Lot 305 in DP 1275011 (**the subject area**).

The project, which is the subject of State Significant Development Application (**SSD-63741210**), comprises the construction and operation of a data centre within the subject area. Approval of SSD-63741210 was obtained on 24 December 2025. The AHMP has been prepared to comply with Items B53 and B54 of the Conditions of Consent accompanying that approval.

The purpose of this AHMP is to outline measures for mitigation of potential harm to Aboriginal objects within the subject area and for ensuing ongoing consultation with the Aboriginal community throughout the project.

The most up to date version of this AHMP must be incorporated into the Construction Environmental Management Plan for the project and kept on file on site for the life of the project (i.e. until completion of all works encompassed by SSD-63741210).

1 Introduction

The present Aboriginal Heritage Management Procedures (**the AHMP**) have been prepared by Urbis on behalf of the NEXTDC Limited (**the Proponent**) for the proposed redevelopment of 16 Johnston Crescent, Horsley Park, NSW, legally defined as Lot 305 in DP 1275011 (**the subject area**) (Figure 1).

The project, which is the subject of State Significant Development Application (**SSD-63741210**), comprises the construction and operation of a data centre within the subject area. Approval of SSD-63741210 was obtained on 24 December 2025. The AHMP has been prepared to comply with Items B53 and B54 of the Conditions of Consent accompanying that approval, which is presented in Table 1 below:

Table 1 – Conditions Compliance Table

Condition	Addressed In
<i>B53. The Applicant must take all reasonable steps so as to not harm, modify or otherwise impact Aboriginal objects, except where authorised by this consent.</i>	Section 1.3
<i>B54. Prior to the commencement of construction, the Applicant must prepare a set of Aboriginal Heritage Management Procedures for the development. A copy of the procedures must be included in the development's CEMP (see condition C2), and must include: (a) a description of measures that would be implemented for: (i) ongoing consultation with the Registered Aboriginal Parties; and (ii) ensuring on-site workers receive heritage inductions prior to carrying out any works on site, and that records are kept of these inductions; and (b) a contingency plan and reporting procedure for the management of unexpected heritage finds and human remains prepared by a suitably qualified and experienced consultant.</i>	Entire Document

The purpose of this AHMP is to outline measures for mitigation of potential harm to Aboriginal objects within the subject area and for ensuing ongoing consultation with the Aboriginal community throughout the project.

The most up to date version of this AHMP must be incorporated into the Construction Environmental Management Plan for the project and kept on file on site for the life of the project (i.e. until completion of all works encompassed by SSD-63741210).

1.1 Subject Area

The subject area is located at 16 Johnston Crescent, Horsley Park, NSW and is legally defined as Lot 305 in DP 1275011 (Figure 1). It is located approximately 35 km west of the Sydney CBD, 17 km west of the Parramatta CBD and 10 km north-east of the future Western Sydney International (WSI) airport. It is within the Fairfield City Council Local Government Area ('Fairfield LGA') and the boundaries of Deerubbin Local Aboriginal Land Council ('Deerubbin LALC').

The subject area encompasses approximately 8.206 ha and has frontages to an as unnamed extension of Old Wallgrove Road to the west and Burley Road to the north (Figure 2). It is bounded to the east by RU4 Primary Production Small Lots and to the south-east by a C2 Environmental Conservation zone. The remainder of the subject area is bounded by IN2 General Industrial zoned land.

The subject area presently comprises vacant land which has been cleared of vegetation and does not contain any existing built form structures. Bulk earthworks approved under a previous DA (DA-893-201) have been completed.



Figure 1 – Subject area

1.2 Project Information

The development proposed under SSD-63741210 encompasses the construction and operation of a data centre within the subject area.

The approved works are as follows:

- (i) Site preparation works including bulk earthworks including tree removal.
- (ii) Staged construction and operation of two data centre buildings comprising a total gross floor area (GFA) of 61,695 m² including 56,464 m² of technical data hall floor space and 5,231 m² of ancillary office floor space, including 'front of house' meeting and administrative spaces.
- (iii) Ancillary development including a centralised security office building at the main vehicle entrance, on-site parking for 200 cars, business identification signage (pylon and elevation signage), civil and stormwater works and 12,769 m² of deep soil landscaping.
- (iv) Provision of a high-voltage (HV) power connection delivering 294 megawatts of power, including a 330 kV substation and a 33 kV switching station, plus above ground diesel storage tanks and above ground water tanks for industrial water and fire water.
- (v) The extension of the existing substation bench to enable the construction of two new 330KV feeder bays including: Moving of access road and Moving the fence line
- (vi) Extension to 330KV Busbar-B Section-2 at Sydney West Substation
- (vii) The construction of two new 330kV switch bay and associated primary and secondary equipment

- (viii) The construction of a new secondary systems building
- (ix) All required secondary systems work.
- (x) Construct a small modular communications building atop an existing slab.

1.3 Statutory Context

The *National Parks and Wildlife Act 1974* (NSW) ('the NPW Act') protects 'Aboriginal objects' and 'Aboriginal places' in NSW. The NPW Act defines 'Aboriginal objects' and 'Aboriginal places' as follows:

- **Aboriginal object** means any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains.
- **Aboriginal place** means any place, which may or may not contain Aboriginal objects, that is declared to be an Aboriginal place under section 84 of the NPW Act because it is or was of special significance with respect to Aboriginal culture.

Under section 86 of the NPW Act, it is an offence to harm or desecrate an Aboriginal object or Aboriginal place. Section 87 of the NPW Act provides the following defences to prosecution under s. 86 of the NPW Act:

- The harm was to a previously unknown Aboriginal object, other than a modified tree, and was caused by a low impact activity as defined in reg. 58 of the NPW Reg.
- The harm was to a previously unknown Aboriginal object and due diligence was exercised by the Proponent to determine whether the activity would harm an Aboriginal object and reasonably determined that no Aboriginal object would be harmed, per section 87(2) of the NPW Act.
- The harm or desecration was authorised by an Aboriginal Heritage Impact Permit ('AHIP'), per section 87(1) of the NPW Act.
- The harm or desecration was authorised by an approved State Significant Development Application, per section 4.41(1)(d) of the *Environmental Planning and Assessment Act 1979* (NSW).

The Applicant must take all reasonable steps so as to not harm, modify or otherwise impact Aboriginal objects, except where authorised by the CoC for SSD-63741210.

1.4 Project Background

An Aboriginal Cultural Heritage Assessment (**the ACHA**) dated 18 June 2024 was prepared by Urbis and submitted in support of SSD-63741210A.¹

The ACHA was undertaken to investigate whether the proposed development of the subject area is likely to impact any Aboriginal objects or Aboriginal places that may exist within the subject area and to formulate measures for avoiding or minimising any such impacts.

An Addendum to the ACHA was prepared by Urbis in dated 27 August 2025. The purpose of the Addendum was to consider the potential impacts of additional works to be undertaken under SSD-63741210 that are not addressed in the ACHA. The Addendum extended the findings and recommendations of the ACHA to those works.

¹ Urbis 2024, *Aboriginal Cultural Heritage Assessment, S4 Data Centre, 16 Johnston Crescent, Horsley Park, NSW*

The findings of the ACHA and Addendum are that:

- No previously identified Aboriginal sites are located within the subject area.
- Part of the subject area along the western boundary is located within 200 m of a first order waterway, while part of the subject area on the eastern boundary is located on a ridgeline, both of which are considered indicative of likely past Aboriginal land use.
- Historical ground disturbance across the entire subject area is high, due primarily to quarrying activities in the subject area beginning in 1970s and more recent earthworks.
- In view of the high ground disturbance across the entire subject area, the Aboriginal archaeological potential of the entire subject area is Very Low.
- The subject area is assessed as having low Aboriginal cultural heritage significance for its limited social and cultural value, noting that there is no evidence of a specific Aboriginal association with the subject area and the high level of ground disturbance in the subject area is likely to have diminished any social and cultural value.
- As there are no known Aboriginal objects within the subject area and it is unlikely to retain any as yet unknown Aboriginal objects, any physical works within the subject area are unlikely to cause either direct or indirect harm to Aboriginal objects or negatively impact inter-generational equity.

Based on the above conclusions, Urbis made the following recommendations in the ACHA and Addendum:

- A copy of the ACHA should be submitted with the Environmental Impact Statement (EIS) in support of SSD-63741210.
- As the proposed works are unlikely to harm any Aboriginal objects or declared Aboriginal places, it is recommended that no further investigation is required for the present development.
- The unexpected archaeological finds and human remains procedures outlined in the ACHA should be followed in the unlikely event that any archaeological materials or human remains, or suspected archaeological materials or human remains, are uncovered during any works within the subject area.

The above recommendations were explicitly endorsed by three of the Registered Aboriginal Parties.

2 Management Measures

This section outlines the roles and responsibilities for all relevant staff and contractors with regard to the management of Aboriginal cultural heritage at the subject area.

The principles of ecologically sustainable development (ESD), in particular the precautionary principle, state that full scientific certainty about the threat of harm should never be used as a reason for not taking measures to prevent harm from occurring. All practicable measures must therefore be taken to avoid harm and conserve any significant Aboriginal objects and/or Aboriginal places, along with their cultural heritage values.

If harm to Aboriginal objects and/or Aboriginal places is unavoidable, management strategies must be implemented to minimise the harm. The type of management strategies proposed must be appropriate to the significance of Aboriginal heritage values, Aboriginal objects and/or Aboriginal places. Harm avoidance and minimisation measures must be feasible and within the financial viability of the proposed activity.

The following management procedures must be followed during any site works throughout the life of the project.

2.1 Induction and Training

All workers on site must receive a suitable heritage induction prior to carrying out any works on site. A Heritage Induction will be prepared by Urbis under a different cover to be included in the standard suite of induction material for on-site workers.

The induction material should be prepared by a qualified archaeologist in consultation with the RAPs. Information to be covered in the induction should include:

- An outline of the purpose of the induction.
- Definitions and images of types of Aboriginal objects/site types.
- Legislative requirements for cultural heritage under the *National Parks and Wildlife Act 1974*.
- Offences and penalties for harming Aboriginal objects
- Overview of the Unexpected Finds Procedures for Aboriginal objects and human remains.
- An outline for recommended reporting and communications procedure to be followed in the event of suspected archaeological find.
- Contact details for Urbis archaeologists, Heritage NSW and Deerubbin LALC.

To ensure compliance by all onsite staff and contractors that all actions required by this AHMP are adequately implemented, the site supervisor or other relevant on-site staff member in charge of managing environmental safety will ensure that inductions are conducted. It will also be the responsibility of site supervisor or other relevant on-site staff member in charge of managing environmental safety to ensure that records are kept of these inductions.

2.2 Unexpected Finds Procedures

Where suspected Aboriginal archaeological material or any human remains are uncovered during project works, the Unexpected Finds Procedures outlined below must be followed.

2.2.1 Unexpected Archaeological Finds Procedure

In the event that any archaeological material is uncovered during any site works, the following steps must be carried out:

- (a) All works must halt in the immediate area to prevent any further impacts to the object(s) and a minimum buffer zone of 20 m must be established around the find. All workers on site are notified about the buffer zone.
- (b) The find must not be moved 'out of the way' without assessment.
- (c) A suitably qualified archaeologist and the Registered Aboriginal Parties for the ACHA must be contacted to determine the significance of the objects.
- (d) If determined to be an Aboriginal object, the site is to be registered in the Aboriginal Heritage Information Management System (AHIMS), which is managed by Heritage NSW, and the management outcome for the site included in the information provided to AHIMS.
- (e) Depending on the significance of the find, reassessment of the archaeological potential of the subject area may be required and further archaeological investigation undertaken.
- (f) The Applicant must consult with the Aboriginal community representatives, the archaeologist(s) and Heritage NSW to develop and implement management strategies for all objects/sites.
- (g) The Planning Secretary must be notified within 30 days from the identification of any unexpected Aboriginal archaeological deposit or object.
- (h) The ACHMP must be updated, in consultation with the RAPs and Heritage NSW, to outline measures for managing the Aboriginal object.
- (i) Works must only recommence with approval from Heritage NSW.

2.2.2 Human Remains Procedure

In the unlikely event that human remains are uncovered during any site works, the following must be undertaken:

- (a) All works must cease immediately in that area and the NSW Police, Heritage NSW and the NSW Department of Planning, Housing and Infrastructure contacted. A minimum buffer zone of 50 m must be established around the find. All workers on site are notified about the buffer zone.
- (b) The find must not be moved 'out of the way' without assessment.
- (c) A suitably qualified archaeologist must be contacted to determine the specific nature and significance of the skeletal remains.
- (d) The Applicant must consult with relevant stakeholders, the archaeologists and Heritage NSW to develop and implement appropriate management strategies for the skeletal (or other) human remains. Should the human remains be deemed Aboriginal in origin all registered Aboriginal parties for the Project are to be notified in writing.
- (e) The ACHMP must be updated, in consultation with the RAPs and Heritage NSW, to outline measures for managing the remains.
- (f) Works must only recommence with approval from Heritage NSW.

2.2.3 Storage of Aboriginal Objects

Any Aboriginal objects salvaged during the project will be temporarily held in a lockable, secure location at the Urbis Sydney office (Angel Place, Level 8, 123 Pitt Street Sydney, NSW 2000, Australia). A Care and Control Agreement for the long-term storage and handling of Aboriginal artefacts recovered from the site shall be developed through consultation with the RAPs.

2.2.4 Updating AHIMS

If any Aboriginal objects (including human remains), are identified during the project ... a site card must be prepared and submitted to the Aboriginal Heritage Information Management System (**AHIMS**) registrar. This should be actioned as soon as practicable. Any impacts to the site must be recorded by submission of an Aboriginal Heritage Impact Recording Form.

2.3 Ongoing Consultation

The Registered Aboriginal Parties (**RAPs**) for the ACHA must be kept informed about the project and continue to be provided with the opportunity to be consulted about Aboriginal cultural heritage management requirements for the life of the project.

Specific circumstances in which the RAPs will be consulted include:

- An Unexpected Finds Procedure is triggered, which may include a site visit if appropriate
- Any amendments to the AHMP are proposed.
- There are significant changes in the status of the project.

In addition to the above, the RAPs must be provided with regular updates (i.e. at least every 6 months) throughout the life of the project.

Consultation with the RAPs will generally be provided in writing via email (or mail if email unavailable) by the Project's representative, or their consultant. All consultation with RAPs must be recorded in a log to ensure auditable compliance.

2.4 Ongoing Evaluation of AHMP

Evaluation of performance against all policies and targets within this document should be undertaken throughout the life of the project. This should be undertaken at least once a year. Where potential improvements are identified, the ACHMP should be updated after approval from DPHI and/or Heritage NSW.

2.5 Roles & Responsibilities

The roles and responsibilities in relation to the present ACHMP are outline in Table 2 below.

Table 2 – Roles and responsibilities

Role	Responsibility
Site Manager	<ul style="list-style-type: none">▪ Provision of adequate resources and training for the implementation of this AHMP.▪ Ensuring that all reporting requirements in according with this AHMP are met, including reporting on site condition and audit results, as well as unexpected finds and database updates.
Employees and Contractors	<ul style="list-style-type: none">▪ Undertake all activities in accordance with this ACHMP and report all potential Aboriginal objects, including human remains, immediately
Qualified Archaeologist and Registered Aboriginal Parties	<ul style="list-style-type: none">▪ Assessment of significance of any potential Aboriginal objects and formulation of management strategies in the event that an Aboriginal object is found▪ Undertaking continues consultation with the RAPs

Glossary

Term	Definition
Aboriginal ceremony and dreaming site	Previously referred to as mythological sites, these are spiritual/story places where no physical evidence of previous use of the place may occur, e.g. natural unmodified landscape features, ceremonial or spiritual areas, men's/women's sites, dreaming (creation) tracks, marriage places etc. These are Aboriginal site features recordable on AHIMS.
Aboriginal cultural heritage	The tangible (objects) and intangible (dreaming stories, legends and places) cultural practices and traditions associated with past and present-day Aboriginal communities.
Aboriginal object	As defined in the NPW Act, any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises NSW, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains.
Aboriginal place	As defined in the NPW Act, any place declared to be an Aboriginal place (under s.84 of the NPW Act) by the Minister administering the NPW Act, by order published in the NSW Government Gazette, because the Minister is of the opinion that the place is or was of special significance with respect to Aboriginal culture. It may or may not contain Aboriginal objects.
Aboriginal resource and gathering sites	Related to everyday activities such as food gathering, hunting, or collection and manufacture of materials and goods for use or trade. These are Aboriginal site features recordable on AHIMS.
AHIMS	Aboriginal Heritage Information Management System. A register of previously reported Aboriginal objects and Aboriginal places in NSW, managed under Section 90 of the NPW Act.
AHIP	Aboriginal Heritage Impact Permit. A permit issued under Section 90, Division 2 of Part 6 of the NPW Act.
Archaeology	The scientific study of material remains of past human life, including artefacts, relics, ruins, buildings and their environment and context.
Art	Art is found in shelters, overhangs and across rock formations. Techniques include painting, drawing, scratching, carving engraving, pitting, conjoining, abrading and the use of a range of binding agents and the use of natural pigments obtained from clays, charcoal and plants. These are Aboriginal site features recordable on AHIMS.
Artefact	Objects such as stone tools, and associated flaked material, spears, manuports, grindstones, discarded stone flakes, modified glass or shell demonstrating evidence of use of the area by Aboriginal people. These are Aboriginal site features recordable on AHIMS.
Artefact scatter	Multiple artefacts associated with one another in the same context. These are recordable on AHIMS as 'artefacts'.
Burial	A traditional or contemporary (post-contact) burial of an Aboriginal person, which may occur outside designated cemeteries and may not be marked, e.g. in caves,

	marked by stone cairns, in sand areas, along creek banks etc. These are Aboriginal site features recordable on AHIMS.
Ceremonial ring	A Raised earth ring associated with ceremony. These are Aboriginal site features recordable on AHIMS.
Cliff	A steep rock face
Code of Practice	<i>Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales</i> (DECCW 2010b).
Conflict site	Previously referred to as massacre sites where confrontations occurred between Aboriginal and non-Aboriginal people, or between different Aboriginal groups. These are Aboriginal site features recordable on AHIMS.
DECCW	Department of Environment, Climate Change and Water NSW.
Due Diligence Code	<i>Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales</i> (DECCW 2010a)
Dune	As defined in the Due Diligence Code, a sand ridge or sand hill formed by the wind.
Earth mound	A mounded deposit of round to oval shape containing baked clay lumps, ash, charcoal and, usually, black or dark grey sediment. The deposit may be compacted or loose and ashy. Mounds may contain various economic remains such as mussel shell and bone as well as stone artefacts. Occasionally they contain burials. These are Aboriginal site features recordable on AHIMS.
EPA Act	<i>Environmental Planning and Assessment Act 1979</i> (NSW)
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth)
Fish trap	A modified area on watercourses where fish were trapped for short-term storage and gathering. These are Aboriginal site features recordable on AHIMS.
Grinding grooves	A groove in a rock surface resulting from manufacture of stone tools such as ground edge hatchets and spears, or rounded depressions resulting from grinding of seeds and grains. These are Aboriginal site features recordable on AHIMS.
Harm	As defined in the NPW Act, to destroy, deface, damage or move an Aboriginal object or destroy, deface or damage a declared Aboriginal place. Harm may be direct or indirect (e.g. through increased visitation or erosion). Harm does not include something that is trivial or negligible.
Habitation structure	Structures constructed by Aboriginal people for short- or long-term shelter. Temporary structures are commonly preserved away from the coastline and may include historic camps of contemporary significance. Smaller structures may make use of natural materials such as branches, logs and bark sheets or manufactured materials such as corrugated iron to form shelters. Archaeological remains of a former structure such as chimney/fireplace, raised earth building platform, excavated pits, rubble mounds etc. These are Aboriginal site features recordable on AHIMS.
Headland	A narrow piece of coastal land that projects from a coastline into the sea or ocean
Hearth	Aboriginal site feature recordable on AHIMS. Cultural deposit sometimes marked by hearth stones, usually also contains charcoal and may also contain heat treated stone fragments.

Isolated find	A single artefact found in an isolated context. These are recordable on AHIMS as 'artefacts'.
Modified Trees	Trees which show the marks of modification as a result of cutting of bark from the trunk for use in the production of shields, canoes, boomerangs, burials shrouds, for medicinal purposes, foot holds etc, or alternately intentional carving of the heartwood of the tree to form a permanent marker to indicate ceremonial use/significance of a nearby area, again these carvings may also act as territorial or burial markers. These are Aboriginal site features recordable on AHIMS.
Non-human bone and organic material	Objects which can be found within cultural deposits as components of an Aboriginal site such as fish or mammal bones, ochres, cached objects which may otherwise have broken down such as resin, twine, dilly bags, nets etc. These are Aboriginal site features recordable on AHIMS.
NPW Act	<i>National Parks and Wildlife Act 1974</i>
NPW Regulation	<i>National Parks and Wildlife Regulation 2019</i>
Ochre quarry	A source of ochre used for ceremonial occasions, burials, trade and artwork. These are Aboriginal site features recordable on AHIMS.
PAD	A 'potential archaeological deposit'. An area where Aboriginal objects may occur below the ground surface. These are Aboriginal site features recordable on AHIMS.
Ridge	A compound landform element comprising a narrow crest that is longer than its width
Ridge top (or ridgeline)	The crest of a ridge that extends along its highest contours
Shell	An accumulation or deposit of shellfish from beach, estuarine, lacustrine or riverine species resulting from Aboriginal gathering and consumption. Usually found in deposits previously referred to as 'shell middens.' These are Aboriginal site features recordable on AHIMS.
SSDA	State Significant Development Application, under Division 4.7 of the EP&A Act
Stone arrangement	Human produced arrangements of stone usually associated with ceremonial activities, or used as markers for territorial limits or to mark/protect burials. These are Aboriginal site features recordable on AHIMS.
Stone quarry	A source of stone which was quarried and used for the production of stone tools by Aboriginal people. These are Aboriginal site features recordable on AHIMS.
Waterhole	A source of fresh water for Aboriginal groups which may have traditional ceremonial or dreaming significance and/or may also be used to the present day as a rich resource gathering area (e.g. waterbirds, eels, clays, reeds etc). These are Aboriginal site features recordable on AHIMS.
Waters	As defined in the Due Diligence Code, the whole or any part of any river, stream, lake, lagoon, swamp, wetlands, natural watercourse and tidal waters (including the sea), where the boundary of tidal waters is defined as the high-water mark.

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